Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

rve

1 Ag84M

Directory of Activities of the Bureau of Plant Industry, Soils, and Agricultural Engineering

1947

Miscellaneous Publication No. 645

United States Department of Agriculture

THIS directory is issued for the information of employees, cooperators, and others interested in the work of the Bureau of Plant Industry, Soils, and Agricultural Engineering. Included are brief statements of the history and functions of the Bureau, an organization chart, and a map showing the locations of field activities. The following information is given for each field station: (1) The name and address of the official in charge; (2) the nature of studies in progress, showing divisions in charge; and (3) the names of cooperating agencies.

Beltsville, Md. Issued June 1948

United States Department of Agriculture
Agricultural Research Administration

Bureau of Plant Industry, Soils, and
Agricultural Engineering

Directory of Activities of the Bureau of Plant Industry, Soils, and Agricultural Engineering 1947

Miscellaneous Publication No. 645

United States
Government Printing Office
Washington : 1948

For sale by the Superintendent of Documents, U. S. Government
Printing Office, Washington 25, D. C. Price 30 cents

ORGANIZATION

Chief of Bureau	Robert M. Salter
Special Assistant to the Chief	P. V. Cardon
Assistant to the Chief	A. H. Moseman
Assistant Chiefs:	
Field Crops Group of Divisions	M. A. McCall
Horticultural and Miscellaneous Group of Divisions.	F. P. Cullinan
Soils Group of Divisions	F. W. Parker
Agricultural Engineering Divisions	A. W. Turner
Administration	H. E. Allanson
Information	J. K. McClarren
Plant Industry Station Supervision	H. P. Sevy and M. C. Miller
Library (Branch of Departmental Library).	Stella Breedlove
Field Crops Group:	
Cereal Crops and Diseases	K. S. Quisenberry
Cotton and Other Fiber Crops and Diseases.	H. W. Barre
Forage Crops and Diseases	O. S. Aamodt
Rubber Plant Investigations	E. W. Brandes
Sugar Plant Investigations	E. W. Brandes
Tobacco, Medicinal, and Special Crops.	D. M. Crooks
Horticultural and Miscellaneous Group:	
Forest Pathology	Lee M. Hutchins
Fruit and Vegetable Crops and Diseases.	J. R. Magness
Mycology and Disease Survey	J. A. Stevenson
Nematology Investigations	G. Steiner
Plant Exploration and Introduction	B. Y. Morrison
Soils Group:	
Soils, Fertilizers, and Irrigation	F. W. Parker
Soil Survey	Charles E. Kellogg
Agricultural Engineering Group:	
Farm Buildings and Rural Housing	Wallace Ashby
Farm Electrification	T. E. Hienton
Farm Power and Machinery	R. B. Gray
Mechanical Processing of Farm Products.	George R. Boyd
Plans and Service	George R. Boyd

Directory of Activities of the Bureau of Plant Industry, Soils, and Agricultural Engineering: 1947

Contents

	Page
Scope of Bureau activities	1
Historical background	3
Administrative organization	7
Field activities	20
Foreign stations	126
Index of field activities by divisions	135
Index of personnel	151

SCOPE OF BUREAU ACTIVITIES

The activities of the Bureau of Plant Industry, Soils, and Agricultural Engineering are concerned with research looking to the solution of crop, soil, machinery, storage, and transportation problems of farmers, foresters, commercial growers, and gardeners, including those of coping with the crop hazards of weather, disease, and insect and other pests of growing and stored products. Included in this research are investigations and experiments in—

(1) Breeding plants that will produce crops of high yield, good quality, and disease resistance—involving fundamental research on the laws of inheritance, looking toward sound procedures.

(2) Introducing and testing promising seeds and plants from foreign countries.

(3) Studying the pathology, ecology, physiology, morphology, and cytology of plants for an adequate understanding of disease control and of the relations between environment and cultivation, and yield and quality.

(4) Understanding the various soils of the country and finding ways to increase their fertility and productivity, including successful fertilizer practices.

(5) Developing improved farm machinery and tools for planting, cultivating, and harvesting crops; for combating their insect pests and diseases; and for storing, processing, and shipping farm products.

(6) Designing buildings that make for more convenient and profitable farming and houses that make living on the farm more comfortable.

This work is directed from the Bureau's headquarters at the Plant Industry Station, Beltsville, Md., situated on the Baltimore Boulevard about 14 miles from the main buildings of the Department of Agriculture, at Washington, D. C. The Plant Industry Station, with its many offices, laboratories, greenhouses, fields, orchards, and experimental plots, covers 1,340 acres, and forms part of the 14,000-acre Agricultural Research Center. Near the headquarters of the Research Center, about 3 miles to the northeast, are the Bureau's offices and laboratories engaged in agricultural engineering research. To the south, inside the District of Columbia, is the National Arboretum, an area of 395 acres; and 12 miles to the east, at Glenn Dale, Md., is a plant introduction station of 50 acres, both of which are administered by the Bureau. The development of the National Arboretum (established under the act of March 4, 1927) was directly assigned to the Bureau by the Congress.

Specialists of the Bureau, operating at numerous field stations throughout the country, conduct intensive research in areas where the major crops under study are grown, their work being done for the most part in cooperation with the States. The Bureau also operates four regional laboratories—for pasture research, at State College, Pa.; for vegetable breeding, at Charleston, S. C.; for soybean investigations, at Urbana, Ill.; and for salinity studies, at Riverside, Calif.—and has plant introduction gardens at Glenn Dale, Md.; Chico, Calif.; Coconut Grove, Fla.; and Savannah, Ga.

The results of this research are made effective by the issuance of technical and popular publications, printed and processed; the timely release of press and radio statements and visual information; and the preparation of technical and other reports for scientific journals and popular farm periodicals. The practical findings are brought directly to farmers, fruit growers, and others interested through close cooperation with the State agricultural colleges and experiment stations and the Department's Extension Service.

The organization of activities is shown by divisions in the accompanying functional chart.

HISTORICAL BACKGROUND

The Bureau of Plant Industry was established in the Department of Agriculture by act of March 2, 1901. Its history, however, may be said to antedate the creation of the Department. In circular letters, the Treasury Department in 1819 and 1827 directed consuls to collect and transmit seeds and plants with information regarding climate, soil, propagation, cultivation, insect pests, and agricultural literature. In 1836 the Commissioner of Patents, of the Department of the Interior, undertook the extra-official duties (later, in 1839, authorized by an appropriation of $1,000) of collecting foreign seeds and plants and distributing them to farmers. In 1856 he employed a botanist and under his Agricultural Division set up a garden for sorghum propagation in The Mall, and in 1862 began the distribution of cotton and tobacco seeds. These activities formed the beginning of what later became the Bureau's world-wide explorations for the introduction and testing of seeds and plants from foreign countries. The early functions continued for more than 40 years before they were taken over by the Department of Agriculture on its establishment in 1862.

In the next period of nearly 40 years the Department's plant-industry research was expanded by appropriations for the culture of cotton and tobacco and for tests on flax and hemp (1863), sorghum (1864), tea culture and sugar beets (1881), and cotton fibers (1883). After the Department was elevated to Executive, or Cabinet, status (1889), the divisions having plant-industry functions were gradually allied and affiliated, so that in 1900 the Secretary reported that he had given them the name "Office of Plant Industry" and recommended their centralization and development as a Bureau, which was accomplished the next year.

The functions of the new Bureau, beginning in 1901, were in the fields of its constituent divisions—Botany, Pomology, Vegetable Physiology and Pathology, Agrostology, Gardens and Grounds, and Seeds—and, by Executive order, in the supervision of the Arlington Experiment Farm, tea investigations, introduction of foreign seeds and plants, and congressional seed distribution.

Added duties and transfers of functions from other agencies changed the complexion of the Bureau from time to time, as did also the discontinuance of functions (as in seed distribution, 1923) and the permanent or temporary transfer of units to other agencies—investigations in soil bacteriology and plant nutrition, for example, were made the responsibility of the Bureau of Chemistry and Soils from 1927 to 1934. One instance of work begun by this Bureau and later taken over by agencies especially established for the purpose was the study of farm management practices, begun in 1906 and in 1915 made the function of the Office of Farm Management. The experiments at the Arlington (Va.) Farm were gradually transferred to the Plant Industry

Station, at Beltsville, Md., beginning in 1932—the first building was erected in 1933 and the first greenhouse in 1934.

The character of the work of the Bureau as it developed during and after the period of formation was expanded, beginning in 1934, with a series of consolidations, transfers, and changes in designations. From the Bureau of Chemistry and Soils came (by return in 1934) the work on soil fertility and soil microbiology, and in 1938 that on soil surveys and on soil chemistry and physics research. In February 1943, with the transfer from the Bureau of Agricultural Chemistry and Engineering of its engineering divisions, the organization was given its present name, Bureau of Plant Industry, Soils, and Agricultural Engineering.

The status of the Bureau in the Departmental organization was modified in 1941, when it became one of the seven research bureaus that were grouped to form the Agricultural Research Administration. Two years later the last of its Washington offices and laboratories joined those that had preceded them, to be consolidated at its present headquarters at the Plant Industry Station.

The present 17 research divisions of the Bureau (see fig. 1, following p. 157) with their predecessor units, were placed in 4 groups in 1945, each under the direction of an Assistant Chief, as follows:

1. Field Crops Group: Cereal Crops and Diseases, Cotton and Other Fiber Crops and Diseases, Forage Crops and Diseases, Rubber Plant Investigations, Sugar Plant Investigations, and Tobacco, Medicinal, and Special Crops.

2. Horticultural and Miscellaneous Group: Forest Pathology, Fruit and Vegetable Crops and Diseases, Plant Exploration and Introduction, Mycology and Disease Survey, and Nematology Investigations.

3. Soils Group: Soils, Fertilizers, and Irrigation, and Soil Survey.

4. Agricultural Engineering Group: Farm Buildings and Rural Housing, Farm Electrification, Farm Power and Machinery, and Mechanical Processing of Farm Products.

Other divisions are Information, operating under the Chief of Bureau; Business Administration and Plant Industry Station supervision, under an Assistant Chief of Bureau; and Plans and Service, under the Agricultural Engineering Group. The Library is a branch of the Department Library.

The work of the Bureau has been directed by the following six Chiefs: Beverly T. Galloway (1901–13), William A. Taylor (1913–33), Knowles A. Ryerson (1934, January–October), Frederick D. Richey (1934–38), E. C. Auchter (1938–42), and Robert M. Salter (since 1942).

ADMINISTRATIVE ORGANIZATION

(Telephone code—TO=TOwer)

ROBERT M. SALTER, Chief of Bureau. Room 227, Administration Building.[1] Telephone, TO–6400, extension 367.

P. V. CARDON, Special Assistant to the Chief. Room 232, Administration Building. Telephone, TO–6400, extension 371.

A. H. MOSEMAN, Assistant to the Chief. Room 230–A, Administration Building. Telephone, TO–6400, extension 371.

M. A. MCCALL, Assistant Chief of Bureau. Room 217, Administration Building. Telephone, TO–6400, extension 369.

F. P. CULLINAN, Assistant Chief of Bureau. Room 227, Administration Building. Telephone, TO–6400, extension 367.

F. W. PARKER, Assistant Chief of Bureau. Room 237, Soils Building. Telephone, TO–6400, extension 349.

A. W. TURNER, Assistant Chief of Bureau. Room 226, North Laboratory, Agricultural Research Center, Beltsville, Md. Telephone, TO–6430, extension 143.

H. E. ALLANSON, Assistant Chief of Bureau. Room 217, Administration Building. Telephone, TO–6400, extension 373.

J. K. MCCLARREN, Head, Division of Information. Room 102, Administration Building. Telephone, TO–6400, extension 413.

H. P. SEVY, Superintendent of Experimental Farm, Plant Industry Station. Room 123, Administration Building. Telephone, TO–6400, extension 284.

M. C. MILLER, Superintendent of Buildings and Utilities, Plant Industry Station. Room 133, Administration Building. Telephone, TO–6400, extension 284.

STELLA BREEDLOVE, Librarian (Branch of Department Library). Room 320, Administration Building. Telephone, TO–6400, extension 416.

---

[1] Unless otherwise indicated, all the addresses in this section are Plant Industry Station, Beltsville, Md.

The Office of the Chief of Bureau, through five assistant chiefs, exercises general supervision and control over the work of the divisions and offices; formulates general policies; makes decisions as to the trend of research and the conduct of information activities and fiscal affairs; coordinates the activities of the Bureau and keeps them in conformity with Federal statutes and governmental regulations; promotes cooperation between divisions and offices with a view to obtaining the maximum efficiency commensurate with the freedom of action necessary to successful research; and develops and makes effective all general policies affecting relations with other bureaus of this and other Departments and with State agricultural agencies.

The Division of Administration is responsible for the business contacts and operations of the Bureau, including: The preparation of the budget and estimates, the allotment of funds, and the approval, audit, and maintenance of expenditure records; the appointment of employees and the maintenance of records of all personnel transactions; the purchase of property, supplies, and equipment, and the maintenance of property records; the handling of claims for injury to Federal employees and damage to private or Government property; the preparation of leases; the supervision of cooperative arrangements; the supervision of the business practices of the Bureau's field stations, and the coordination of various field business activities among the stations and with the Beltsville service; and the maintenance of files and the handling of mail.

The Division of Information is responsible for the editing of the scientific, technical, and popular manuscripts of the Bureau and the reviewing and compiling of other research material for publication; for the preparation of material for radio broadcasts and statements for the press on scientific developments of current interest; for special report writing; for the maintenance of photographic and other illustrative material for use within the Bureau; and for aid to free-lance and other writers interested in its accomplishments.

The management of Station buildings and grounds is under the direction of two superintendents—one in charge of buildings and utilities, the other in charge of the experimental farm. Seven brick buildings house the laboratories and offices of the Bureau. The last one—the Administration Building—was erected to connect, as north and south wings, the first two structures begun in 1932. The greenhouses, arranged in three rows, or ranges, with connecting brick buildings for offices and laboratories of scientists engaged in greenhouse work, cover 200,000 square feet. The Station occupies 1,340 acres.

The Library, located on the third floor of the Administration Building, is a branch of the Library of the United States Department of Agriculture. Through cooperation with that and other libraries and with another branch library at the Agricultural Research Center, it provides the facilities needed by research workers.

Cereal Crops and Diseases

K. S. QUISENBERRY, head agronomist, in charge. Room 123, South Building, Plant Industry Station. Telephone, TO-6400, extension 304

The Division of Cereal Crops and Diseases is responsible for research on the production, breeding, and improvement of the cereal crops—corn, wheat, oats, barley, rice, sorghums, and rye—and on seed flax and weeds. This research includes studies on seedbed preparation; date, rate, depth, and manner of seeding; cultivation; fertilizers; rotations; harvesting; storage; diseases and their control; and the basic laws of cereal crop physiology, genetics, biophysics, and pathology, which are the necessary basis for crop breeding and improvement and for adjusting methods of production to obtain maximum yield and quality. The work on weed control includes studies of rotations, soil treatments, and herbicides. The primary object of all this research is to stabilize crop production and quality and to reduce production costs by removing such hazards as disastrous effects of disease and susceptibility to drought, heat, and cold. This research is cooperative with other Federal agencies and several State agricultural experiment stations.

Cotton and Other Fiber Crops and Diseases

H. W. BARRE, head pathologist, in charge. Room 303, Administration Building, Plant Industry Station. Telephone, TO-6400, extension 403

The Division of Cotton and Other Fiber Crops and Diseases has charge of research on the production of fiber crops, including investigations of their diseases and methods of control and breeding for disease resistance. It studies cultural practices for growing cotton; the botanical and morphological characters of this and other fiber plants; genetic, physiological, and ecological conditions; breeding superior varieties, including Egyptian and sea-island cottons; the effect of soil, climate, and other factors on yield, quality, and value of fiber; the chemical, physical, and other properties of fibers that determine values for specific uses, and measurements of these properties; and the utilization and maintenance of superior strains of cotton through the organization of single-variety communities. It makes similar investigations also of hemp and flax fiber production and of hard fibers used for ropes, twines, and other purposes. These activities are conducted in cooperation with other divisions of this Bureau; with other agencies of the Department, particularly the Bureau of Agricultural and Industrial Chemistry, the Bureau of Entomology and Plant Quarantine, and the Production and Marketing Administration; with the State agricultural experiment stations and extension services; and with counties and farm-group organizations.

Farm Buildings and Rural Housing

WALLACE ASHBY, principal agricultural engineer, in charge. Room 218, North Laboratory, Agricultural Research Center. Telephone, TO-6430, extension 142

The Division of Farm Buildings and Rural Housing conducts research to determine the requirements of farm dwellings and of buildings for livestock, crop storage, and other farm purposes. Its work includes studies of the basic principles governing design, construction, and use of farm buildings, including temperature control, ventilation, and related features. Much of the work in this field is done cooperatively with other bureaus of the Department and with State agricultural experiment stations, and close relations are maintained with various industries serving the engineering needs of farmers. Research results are reported in technical and popular bulletins and incorporated in designs of improved buildings that are made available to farmers through the Plan Exchange Services, carried on in cooperation with the extension services of the State agricultural colleges.

Farm Electrification

T. E. HIENTON, principal agricultural engineer, in charge. Room 213A, North Laboratory, Agricultural Research Center. Telephone, TO-6430, extension 84.

The Division of Farm Electrification is concerned with investigations on farm use of electricity for heat, light, and power. It studies electric radiation, both visible and invisible, to determine the effects on the stimulation or retardation of activity of farm animals, poultry, plants, and insect and other pests. The division conducts research on the utilization of electric motors to drive farm machines and on evaluating new methods and procedures for performing such farm tasks as curing, drying, grain and forage processing, and refrigeration. It makes investigations to determine the possibilities and limitations of electric heaters for sterilization, pasteurization, and drying and for plant and animal production. Cooperative relations are maintained with various industries serving the engineering needs of the farmer, with other bureaus of the Department, and with agricultural experiment stations of the various States.

Farm Power and Machinery

R. B. GRAY, principal agricultural engineer, in charge. Room 202, North Laboratory, Agricultural Research Center. Telephone, TO-6430, extension 125

The Division of Farm Power and Machinery is concerned with research on the efficient use of the mechanical power and equipment on farms. This includes experiments in the mechanics of seedbed preparation, fertilizer placement, insecticide application, and planting, cultivating, harvesting, and handling crops. The studies are designed primarily to develop improved procedures or methods that will enable farmers to get maximum yields of high-quality products at minimum cost. Industry makes use of the results obtained and of new principles discovered to design machines for helping farmers gain these objectives. Research in this field is in large part cooperative with the State agricultural experiment stations, other bureaus of the Department, and industries serving the agricultural needs of the farmer.

Forage Crops and Diseases

O. S. AAMODT, head agronomist, in charge. Room 335-A, South Building, Plant Industry Station. Telephone, TO-6400, extension 275

The Division of Forage Crops and Diseases is concerned with the study of all plants used as forage, whether for hay, silage, pasture, or range, and also of cover, green-manure crops, and turf. The activities include such agronomic phases of crop production as varietal studies, cultural requirements, grazing practices, and hay and seed production. The Division also studies forage-plant diseases, utilization, improvement by selection and breeding, and plot technique. It conducts field experiments in many States, mainly in cooperation with State agricultural experiment stations.

Forest Pathology

LEE M. HUTCHINS, head pathologist, in charge. Room 114, North Building, Plant Industry Station. Telephone, TO-6400, extension 332

The Division of Forest Pathology investigates diseases that injure forest, shade, and ornamental trees and forest products. Throughout the lifetime of trees, in the nursery, plantation, or forest, they are exposed to many organisms that may reduce their growth rates, kill them, or otherwise destroy their value for commercial, aesthetic, or other uses. Forest products (lumber, wood in buildings and manufactured articles, and such) are subject to decay and degrade. The Division studies the causes of diseases and devises practical control methods, both for native diseases and for those introduced from foreign countries, such as chestnut blight, Dutch elm disease, and white pine blister rust. The Division maintains 16 field laboratories and in its activities cooperates with other Federal agencies, being directly responsible for forest disease research for the Forest Service, the Soil Conservation Service, and the National Park Service. Cooperation is also maintained with State agricultural experiment stations, State and municipal forest and shade-tree officials, with colleges and universities, and with private timberland owners.

Fruit and Vegetable Crops and Diseases

J. R. MAGNESS, head horticulturist, in charge. Room 307, South Wing, Administration Building, Plant Industry Station. Telephone, TO-6400, extension 237

The Division of Fruit and Vegetable Crops and Diseases is concerned with research on fruits, nuts, vegetables, and floricultural and other ornamental horticultural crops. Its investigations include studies of cultural methods and practices and their relation to regularity of crop production and quality of product; studies of varieties and their suitability for diverse conditions and uses; breeding experiments, to obtain new varieties of greater merit for different purposes and to extend the range of adaptation; and research on the diseases of these crops and their control. They also include rootstock and farm windbreak investigations; research in methods of handling, transportation, and storage; studies of market diseases of fruits, nuts, vegetables, and flowers; determination of the suitability and relative merit of fruit and vegetable varieties for preservation and utilization in different ways; and the effects of diverse cultural and handling treatments on the quality of the product, including vitamin content. Extensive cooperation in all these lines of research is maintained with other Federal agencies, with State agricultural colleges and experiment stations, and, though less extensive, with commercial and grower groups.

Mechanical Processing of Farm Products

George R. Boyd, principal agricultural engineer, in charge.
Room 224, North Laboratory, Agricultural Research Center.
Telephone, TO-6430, extension 159

The Division of Mechanical Processing of Farm Products conducts research on mechanically processing fruits, vegetables, some field crops, and dairy, poultry, and fiber products before marketing, either on the farm or in community-size industries, so that only the part having commercial value will be transported from the community. The work is carried on in cooperation with other agencies of the Department and with State agricultural experiment stations, and close relations are maintained with industrial concerns interested in this phase of agricultural engineering.

Mycology and Disease Survey

J. A. STEVENSON, principal mycologist, in charge. Room 14, North Building, Plant Industry Station. Telephone, TO-6400, extension 315

The Division of Mycology and Disease Survey is responsible for systematically collecting and indexing current information on the distribution and prevalence of plant diseases and on the losses caused by them; the periodical dissemination of this information to plant pathologists and others concerned; publishing periodical summaries of host plants and disease agents and of the literature pertaining to pathological and mycological studies. The Division also identifies fungi for Federal and State cooperators and the general public, particularly the forms causing plant diseases or deterioration of plant products, those concerned in industrial mycology, and the poisonous or edible types; maintains one of the largest fungus herbariums in the country; investigates problems of classification of economic fungus groups and the stabilization of fungus nomenclature; and provides information on the culture and diseases of cultivated mushrooms.

Nematology Investigations

G. STEINER, principal nematologist, in charge. Room 12, Greenhouse Range 2, Plant Industry Station. Telephone, TO-6400, extension 249

The Division of Nematology conducts research on nematodes, or eelworms, that parasitize plants or are associated with plant diseases and on the development and improvement of control measures; studies nematodes living free in the soil or elsewhere and those attacking insects and other invertebrates, especially those that parasitize and destroy these and similar agricultural pests; and handles routine inquiries, specimen examinations, and determinations for cooperators and others interested, regulatory matters, and related problems concerning all nematodes other than those that parasitize man and vertebrate animals.

Plant Exploration and Introduction

B. Y. **Morrison**, principal horticulturist, in charge. Room 234, North Building, Plant Industry Station. Telephone, TO-6400, extension 274

The Division of Plant Exploration and Introduction serves as a coordinating agency for obtaining from all parts of the world new, rare, and promising plants. These may be useful in the development of new crop industries directly, for the diversification or expansion of economic needs, or as material to be used by plant breeders, especially as related to the development of disease- and insect-resistant crops. The Division provides initial protection against the introduction of foreign insects and diseases and conducts preliminary propagation and other tests at four widely separated field stations. It conducts studies of potential crop plants and of soils and climates of foreign countries as compared with those of this country, with a view to introducing materials best adapted to the needs here. The Division also names wild and cultivated flowering plants sent to the Department for identification. It is charged with the development of the National Arboretum. In these activities it cooperates with crop specialists of the Department, State agricultural colleges and experiment stations, botanic gardens, arboretums, and nurserymen, and with specially qualified private individuals on selected lists.

Rubber Plant Investigations

E. W. **Brandes**, head pathologist, in charge. Room 223, South Building, Plant Industry Station. Telephone, TO-6400, extension 329

The Division of Rubber Plant Investigations is concerned with studies leading toward the development of sources of rubber within the

Western Hemisphere. It conducts a cooperative project with 13 Latin-American Governments, involving long-term research and encouragement of plantation development of the hevea rubbertree in the American Tropics, distributes improved strains from three regional field stations to cooperating agencies and individuals in suitable localities, and provides technical assistance on all phases of hevea rubber production. Investigations include study and control of important diseases, factors affecting growth and yield, and, through jungle selection and a comprehensive breeding program, the development of superior strains combining resistance, high yield, and other desirable qualities. It makes field and laboratory studies of native and introduced plants that can be grown in the United States as possible domestic sources of rubber. Investigations include selection, breeding, and disease studies to develop strains with improved growth and yield characteristics. It furnishes information on wild or cultivated rubber-bearing plants to other governmental agencies, private companies, and individuals interested in sources of rubber for normal or emergency needs.

Soils, Fertilizers, and Irrigation[2]

F. W. PARKER, head soil scientist, in charge. Room 237, Soils Building, Plant Industry Station. Telephone TO–6400, extension 349

The Division of Soils, Fertilizers, and Irrigation conducts research on soil-management practices to evolve successful agricultural systems capable of maintaining or raising the level of soil productivity under conditions of dry-land agriculture, as in the Great Plains; under humid conditions, as in the Central and Southern States; under conditions requiring irrigation or drainage;

---

[2] After this directory was prepared, the Division of Soils, Fertilizers, and Irrigation was reorganized into two divisions: *Soil Management and Irrigation* (F. W. PARKER) and *Fertilizer and Agricultural Lime* (K. D. JACOB). The resulting changes in personnel and field offices are not shown in this edition.

and on saline soils requiring special treatments. To provide basic information on the factors governing soil productivity and plant growth and quality, it investigates physical and chemical characteristics of soil, soil organisms, organic matter, fertilizer requirements, salinity, and other soil properties. The Division also conducts investigations of fertilizer materials, resources, and supplies and studies the development of new processes, the preparation and evaluation of new materials and mixed fertilizers, and the use, production, consumption, price, and trade relations of all types of fertilizers. Three sections of its organization deal, respectively, with soil management and irrigation research; basic soil and plant relationships; and fertilizers and agricultural lime. A fourth section, dealing with salinity problems, includes a laboratory at Riverside, Calif., described under "Field Activities." Its field investigations are carried on in cooperation with State agricultural experiment stations or at field stations.

Soil Survey

CHARLES E. KELLOGG, head soil scientist, chief. Room 326, North Building, Plant Industry Station. Telephone, TO-6400, extension 261

The Division of Soil Survey carries on a Nation-wide program of classifying and mapping the soils of the United States. In this program, known as the Soil Survey, the soils of the entire country will eventually be mapped in such detail that anyone who is interested in them—farmer, land buyer, agronomist, horticulturist, appraiser, tax assessor, or highway engineer—can locate the kinds found on each farm, know their characteristics, and compare them directly with the soils on any other farm. Such a survey tells the farmer whether his soils are like those on other farms in his county, State, or region or on the experimental plots or fields of his State experiment station where new crops, tillage methods, fertilizer practices, or drainage or irrigation practices are being tried or have proved successful. It enables him, therefore, to tell with more certainty whether the introduction of a new crop, variety, or farm practice is likely to succeed on his farm. All this work involves the identification, definition, description, classification and correlation, and mapping of many kinds of soil types throughout the country. The published report on each survey, whether county-wide or of less extent, describes each soil as to depth, drainage, stoniness, slope, thickness, friability, and permeability of layer, its texture, and the important chemical characteristics that affect its fertility. In addition to this program, which is directed under four regions, with headquarters, respectively, in Maryland, Tennessee, Nebraska, and California, the Division cooperates with State agricultural experiment stations, the Soil Conservation Service, the Forest Service, the Tennessee Valley Authority, and other agencies by furnishing experienced inspectors to assist in classifying the soils in terms of the Nation-wide system, so that the work of these agencies will help complete the soil survey coverage of the whole country.

Sugar Plant Investigations

E. W. **Brandes**, head pathologist, in charge. Room 223, South Building, Plant Industry Station. Telephone, TO-6400, extension 329

The Division of Sugar Plant Investigations, in its research on sugar beets, sugarcane, and sugar sorghum, is responsible for agronomic investigations to develop improved methods of culture, including weed control, efficient use of fertilizers, and discovery of labor-saving techniques for growing and handling the sugar crops; breeding investigations to develop high-yielding and disease-resistant strains adapted to the various sugar-producing areas of the United States; and plant pathological investigations on the important virus, bacterial, and fungus diseases of sugar beets, sugarcane, and sugar sorghum, to discover practical control measures. These lines of research are undertaken partly in cooperation with the State agricultural experiment stations.

Tobacco, Medicinal, and Special Crops

D. M. Crooks, head horticulturist, in charge. Room 106, South Building, Plant Industry Station. Telephone, TO–6400, extension 325

The Division of Tobacco, Medicinal, and Special Crops conducts investigations of substantially all phases of growing, curing, and handling tobacco, except those relating to marketing and to tobacco insects and their control. It studies tobacco diseases and their control, conducts laboratory research on the factors influencing the quality of leaf tobacco, and makes field investigations in the improvement of varieties and methods of fertilization, growing, curing, and handling different types of leaves, as each distinctive class of tobacco presents special cultural problems. Research on medicinal and special crops includes investigations of various plants for drugs, essential and fixed oils, flavoring materials and condiments, insecticides, raticides, and tannins; and of the hop plant for its beverage-flavoring properties. This work includes studies on cultural requirements; adaptation to soil and climate as related to yield and quality; and breeding and selection for improved yield, disease resistance, and better quality. The Division makes laboratory studies to evaluate the plants and their products and their usefulness for commercial purposes. Much of the research on these crops is conducted in cooperation with the State agricultural colleges and experiment stations.

FIELD ACTIVITIES

The field stations of the Bureau of Plant Industry, Soils, and Agricultural Engineering are shown in **bold-faced type**, and the other activities of the Bureau in field and laboratory, frequently in cooperation with a State, appear in *italic*. Italics are also used to designate divisions or projects of the Bureau under which certain lines of work at stations are conducted. The locations are shown on the map, figure 2 (following p. 157).

ALABAMA

Auburn

Agricultural Experiment Station, Alabama Polytechnic Institute (cooperative investigations).—About three-fourths mile from railroad station (Western Railway of Alabama) and one-half mile from Greyhound bus station. Telephone, 960, listed as Alabama Polytechnic Institute.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton breeding, genetics, improvement, and diseases. A. L. SMITH, pathologist, in charge.

Cotton improvement in standardized one-variety communities. O. L. ANDREWS, agent, in charge.

Farm Power and Machinery.—Investigations of tillage tools and of machinery for producing and harvesting southern crops, such as peanuts and tung nuts (cooperation with Georgia Agricultural Experiment Station, U. S. Soil Conservation Service, and the Pearl River County Farm Bureau of the Mississippi Farm Bureau Federation). I. F. REED, agricultural engineer, in charge. In Tillage Machinery Laboratory, Alabama Agricultural Experiment Station, on the extension of Samford Street from College Street leading toward the dairy barn. Telephone, 377.

Fruits and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). WALTER GREENLEAF, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under humid conditions; fertilizer requirements and placement for corn, cotton, and other field crops; effect of crop and soil management, tillage, fertilization, and cover crops on soil properties and productivity. ROBERT W. PEARSON, senior soil scientist, in charge. Telephone, 960.

Fairhope

Gulf Coast Substation, State Agricultural Experiment Station (cooperative investigations).—About 3 miles from Fairhope and 19 miles from Mobile. Greyhound busses from Mobile and Pensacola pass the substation. Telephone, 2131.

Forage Crops and Diseases.—Soybean investigations. OTTO BROWN, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Tests of early ripening and hardy varieties of the Satsuma orange; cultural methods and rootstock studies. Directed by F. E. GARDNER, principal pomologist, Orlando, Fla.; local supervision by H. F. YATES, agent.

Investigations on mineral requirements of tung varieties, with special emphasis on effect of element combinations on oil content, growth, and malnutrition symptoms. United States Field Laboratory for Tung Investigations.

Spring Hill

State Field Laboratory (cooperation with State Agricultural Experiment Station and State Department of Agriculture).—About 4 miles from business center of Mobile on the Spring Hill Road. Telephone, Mobile 6–6856.

Fruit and Vegetable Crops and Diseases.—Investigations on azalea flower spot disease and other diseases of ornamentals. D. L. GILL, associate pathologist, in charge.

ARIZONA

Phoenix

Weed Control Studies (cooperation with U. S. Bureau of Reclamation).—24 New Post Office Building. Telephone, 3–2571.

Cereal Crops and Diseases.—Investigations of aquatic-weed problems in irrigation canals and ditches and of land weeds on adjacent ditch banks and farm lands. L. S. EVANS, associate agronomist, in charge.

Sacaton

United States Field Station.—On Gila Indian Reservation, 15 miles north of Casa Grande, 15 miles west of Coolidge, and 42 miles southeast of Phoenix. Can be reached by bus from Phoenix. Transportation arrangements should be made in advance with R. H. PEEBLES, superintendent. Telephone, Sacaton 2 (Casa Grande exchange).

Cereal Crops and Diseases.—Experiments with introduced wheat, barley, oats, and sorghums to determine varietal identity, spring and winter habit, and freedom from destructive diseases; varietal comparisons of barley in the nursery; and genetic studies on fundamental problem of inheritance in barley. Quarantine station for new introductions. Directed from Beltsville, Md.; local supervision by R. H. PEEBLES, agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Investigations on cotton culture, breeding and improvement, genetics, botany, and morphology, and on disease control; production of foundation stock cottonseed (cooperation with State Agricultural Experiment Station) and truck and fruit crops (cooperation with U. S. Bureau of Indian Affairs). R. H. PEEBLES, agronomist, in charge.

Rubber Plant Investigations.—Breeding studies on guayule. B. L. JOHNSON, associate geneticist, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on canaigre. R. H. PEEBLES, agronomist, in charge.

Tucson

State Agricultural Experiment Station (cooperative investigations).—One and one-half miles from Southern Pacific Railroad station; 4 miles northwest of post office. Can be reached by bus. Telephone, 3030 (listed as University of Arizona).

Fruit and Vegetable Crops and Diseases.—Investigations on pecan production. Leland Burkhart, agent, in charge.

Forest Pathology Field Laboratory (cooperation with State Agricultural Experiment Station, National Park Service, and U. S. Forest Service).—216 Stadium Building, 500 block North Vine Street. Can be reached by bus from railroad and bus stations. Telephone, 5916.

Forest Pathology.—Investigations of diseases of trees in national parks and monuments, including stem rot of giant cactus. Directed by L. S. Gill, senior pathologist, Albuquerque, N. Mex.; local supervision by P. C. Lightle, assistant pathologist, in charge.

Yuma

Lower Colorado Irrigation Agriculture Investigations (cooperation with U. S. Bureau of Reclamation and State Agricultural Experiment Station).—At the Yuma Air Base, 8 miles southeast of Yuma, on U. S. Route 80. Can be reached by bus from Yuma, or telephone regarding transportation to Research Laboratory. Telephone, 1354.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; irrigation methods and water requirements of crop plants; fertilization, crop-water use, crop adaptation, and plant-disease control on newly irrigated lands. E. G. Noble, principal agronomist, in charge, located at Bard, Calif.

ARKANSAS

Fayetteville

State Agricultural Experiment Station (cooperative investigations).—Within walking distance from the St. Louis-San Francisco Railway station. Telephone, 899.

Cotton and Other Fiber Crops and Diseases.—

Cotton-plant nutrition and related investigations. W. H. Tharp, Jr., physiologist, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). V. M. Watts, collaborator, in charge.

Little Rock

Cotton Field Office (cooperation with State Agricultural Extension Service).—Post Office Building. Telephone, 4–3301 (listed under Agricultural Extension Service).

Cotton and Other Fiber Crops and Diseases.—Cotton improvement in standardized one-variety communities. J. R. Smith, agent, in charge.

Stuttgart

Rice Branch Experiment Station, State Agricultural Experiment Station (cooperative investigations).—Nine miles southeast of Stuttgart on State Route 30 (St. Louis Southwestern Ry. and Southwestern Greyhound Bus Line). Telephone 9509–F–11 regarding transportation to station.

Cereal Crops and Diseases.—Investigation on the production, improvement, and diseases of rice, oats, and barley. C. R. Adair, associate agronomist, in charge.

Forage Crops and Diseases.—Investigations of breeding and culture of soybeans in relation to their adaptation to industrial utilization. C. R. Adair, agronomist, in charge.

CALIFORNIA

Bard

United States Yuma Field Station.—Eight miles northeast of Yuma, Ariz., railroad station

(Southern Pacific). Visitors will be met at Yuma by automobile. Telephone, 3000 R–3.

Forage Crops and Diseases.—Selection and breeding of alfalfa for disease resistance under southwestern conditions. E. G. NOBLE, principal agronomist, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; irrigation methods and water requirements of crop plants. E. G. NOBLE, principal agronomist, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on poppies and other condiment plants. E. G. NOBLE, principal agronomist, in charge.

Berkeley

Soil Survey Office, Far Western States—324 Woolsey Building, 2168 Shattuck Avenue. Telephone, Ashberry 7980.

Soil Survey.—Soil types are identified, defined, and classified on the basis of their characteristics, and county soil maps are prepared, showing their distribution. Soil survey reports are written, describing the soil types in terms of both their morphology and their crop adaptability and production under farm practices. This work is carried on cooperatively with the State agricultural experiment stations of the region and in many counties with the Soil Conservation Service or other interested Federal agencies. Soil maps and relevant soil data are used to guide regional programs of agricultural production, adjustment, and conservation and for the demonstration and extension of scientific and practical farm practices and rural-land utilization. The work of the inspectors, assistant inspectors, and other soil scientists is under the supervision of R. C. ROBERTS, soil scientist, regional inspector, in charge. *Subheadquarters:* Albuquerque, N. Mex.

Biggs

Biggs Rice Field Station (*cooperation with State Agricultural Experiment Station and Sacramento Valley Grain Association.*).—Four miles northwest of Biggs (Southern Pacific R. R.). Transportation arrangements can be made by communicating with L. L. Davis. Telephone, 12–Y–11.

Cereal Crops and Diseases.—Rice culture, including fertilizer experiments, rotations, seeding rates, and seed treatment. Rice breeding to develop higher yielding, improved quality, and better adapted varieties; and to increase and distribute pure-seed lots. L. L. Davis, associate agronomist, in charge.

Chico

United States Plant Introduction Garden.—About 1½ miles south and 2 miles east of post office at Chico (Southern Pacific R. R. and Sacramento Northern R. R.; also bus from Sacramento). Visitors will be met by car from field station. Telephone, 312–W.

Plant Exploration and Introduction.—Propagation, testing, and distribution of rare and valuable economic and ornamental plants from foreign countries and United States possessions. L. E. Joley, associate horticulturist, in charge.

Davis

University Farm (*cooperative investigations*).—On the Southern Pacific Railroad; can be reached from Sacramento by busses of the California Transit Co. and the River Auto Stage. Telephone, 3611.

Cereal Crops and Diseases (*some entomological cooperation with the Division of Cereal and Forage Insects of the Bureau of Entomology and Plant Quarantine*).—Experiments with barley, wheat, and oats for varietal evaluation, breeding, genetic, pathologic, and physiologic applications. C. A. SUNESON, agronomist, in charge. Telephone 30, extension 304.

Farm Buildings and Rural Housing.—Investigations of environmental factors influencing development, production, and health of animals in warm climates and of design of buildings to meet requirements. C. F. KELLY, agricultural engineer, in charge. Telephone 30, extension 566.

Fruit and Vegetable Crops and Diseases.—Fruit breeding investigations, with special attention to peaches, plums, and apricots. C. O. HESSE, associate geneticist, in charge. Telephone 30, extension 319. (Work also at California Agricultural Experiment Station orchards at Winters, 15 miles northwest of Davis.)

The breeding of disease-resistant and delayed-bolting types of onions. G. N. DAVIS, collaborator, in charge. Telephone 30, extension 319.

Fresno

United States Grape Field Station.—Four miles southeast of Fresno (Santa Fe R. R. and Southern Pacific R. R.). Telephone, 5–0203.

Fruit and Vegetable Crops and Diseases.—Grape production and breeding investigations. ELMER SNYDER, senior pomologist, in charge.

Investigations in fruit and vegetable handling, transportation, and storage. W. T. PENTZER, senior physiologist, in charge.

Investigations of physiological diseases of fruits. W. S. BALLARD, senior pathologist, in charge.

Indio

United States Date Field Station.—Two miles west of Southern Pacific Railroad station at Indio. Automobile available to station on notice. Telephone, 2372.

Fruit and Vegetable Crops and Diseases.—Investigations in growing of date palms, including pollination, pruning, nutrition, water requirements, and variety adaptation. J. R. FURR, senior physiologist, in charge.

Effect of irrigation and other cultural practices on productivity of citrus in desert areas of the Southwest. J. R. FURR, senior physiologist, in charge.

La Jolla

United States Horticultural Field Station.—Six miles north of La Jolla on U. S. Route 101. Station can be reached by stage line from San Diego. Transportation arrangements can be made in advance by communicating with T. W. WHITAKER, geneticist, in charge. Telephone, Glencove 5–4344.

Fruit and Vegetable Crops and Diseases.—Investigations of diseases of cantaloup, lettuce, and carrots, especially breeding of disease-resistant strains of high market quality. Field trials in Imperial Valley. T. W. WHITAKER, geneticist, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on red squill. T. W. WHITAKER, geneticist, in charge.

Pasadena

California Institute of Technology (cooperative investigations).—University can be reached by taxi.

Rubber Plant Investigations.—Biochemical studies of rubber formation in plants. JAMES BONNER, collaborator, in charge.

Pomona

United States Horticultural Field Laboratory.—In New Post Office Building. Telephone, 1748.

Fruit and Vegetable Crops and Diseases.—Investigations in fruit and vegetable handling, transportation, and storage, including studies on precooling. E. M. Harvey, senior physiologist, in charge.

Investigations on handling and storage of dates. G. L. Rygg, associate physiologist, in charge.

Riverside

Citrus Experiment Station, State Agricultural Experiment Station (cooperative investigations).—About 3 miles from Riverside. Can be reached by bus from Riverside post office. Telephone, 7000, extension 44.

Fruit and Vegetable Crops and Diseases.—Investigations in virus diseases of stone fruits. L. C. Cochran, senior pathologist, in charge.

United States Fiber Crops Field Laboratory.—3960 Lemon Street. Telephone, 851, listed under U. S. Government, Agriculture Department, Cotton Division. Field experiments at the United States Regional Salinity Laboratory.

Cotton and Other Fiber Crops and Diseases.—Investigations of the cytology and genetics of cotton and cotton relatives. J. M. Webber, associate cytologist, in charge.

United States Regional Salinity Laboratory.—At the foot of Mount Rubidoux, about 1 mile west of business district, at 14th Street and Glenwood Drive. Telephone, 6261.

Soils, Fertilizers, and Irrigation.—Basic research on the problems encountered in producing crops on saline and alkali soils, including their reclamation; the relationship of soil salinity to physical and chemical properties; irrigation, drainage, and soil-management practices; salt tolerance and water requirements of crops. (Some of these studies involve cooperative projects with experiment stations of the Western States.)

Analytical investigations on the quality of irrigation and drainage waters and their agricultural significance, including determination of salt content and salt constituents, occurrence of boron and tolerance limits for crop plants, and methods of characterizing alkali and saline soils as an aid to reclamation. H. E. HAYWARD, director, in charge.

United States Sugar Plant Field Laboratory.—Girls' High School Building, between Lemon, Lime, Ninth, and Tenth Streets. Telephone, 851.

Sugar Plant Investigations.—Investigation of curly top disease of sugar beets. EUBANKS CARSNER, principal pathologist, in charge.

Agronomic investigations on sugar beets in southern California. CHARLES PRICE, agronomist, in charge.

Sacramento

United States Horticultural Field Office.—219 Federal Building. Telephone, 2–2802.

Fruit and Vegetable Crops and Diseases.—Walnut and almond production and improvement investigations. M. N. WOOD, pomologist, in charge.

Salinas

United States Natural Rubber Research Station.—(*Cooperating with U. S. Bureau of Agricultural and Industrial Chemistry.*)—About 2½ miles from Salinas. Transportation arrangements can be made by telephoning Dr. Walker, or station can be reached by taxi.

Rubber Plant Investigations.—Crop production studies on guayule; plant improvement studies on kok-, tau-, and krim-saghyz. MARION N. WALKER, principal agriculturist, in charge.

San Francisco

United States Forest Pathology Field Laboratory (cooperation with U. S. Forest Service, National Park Service, Stanford University, and Rancho Santa Ana Botanic Garden).—720 Appraisers Building, 630 Sansome Street.

Can be reached by streetcar from railroad and bus stations. Telephone, Yukon 3111.

Forest Pathology.—Investigations of tree diseases, including those that affect timber stands, young natural stands and plantations, forest nurseries, street and shade trees, and trees in national parks and Federal recreational areas; and of decay and deterioration of forest products. W. W. WAGENER, senior pathologist, in charge.

Shafter

United States Cotton Field Station (*cooperation with Kern County, Calif., and California Planting Cotton Seed Distributors*).—On Shafter Avenue, 2 miles north of Shafter (Atchison, Topeka & Santa Fe R. R.). Visitors will be met by automobile from field station. Telephone, 658.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton breeding and improvement, genetics, fiber properties, plant physiology, culture, and disease control; also in promoting farm use of improved seed stocks. G. J. HARRISON, senior agronomist, in charge.

Rubber Plant Investigations.—Field studies on tau-saghyz. Directed from Beltsville, Md.; local supervision by G. J. HARRISON, senior agronomist, in charge.

Tobacco, Medicinal, and Special Crops.—Test plantings of pyrethrum to determine the possibilities of the plant as a commercial crop. Directed from Beltsville, Md.; local supervision by G. J. HARRISON, senior agronomist, in charge.

Stanford University

Stanford University (*cooperative investigations*).—University can be reached by taxi from Palo Alto.

Rubber Plant Investigations.—Genetic studies on guayule. REED C. ROLLINS, senior geneticist, in charge.

CANAL ZONE

Pedro Miguel (Summit)

United States Sugarcane Experiments (cooperation with the Panama Canal Service.)—Headquarters at Canal Zone Plant Introduction Gardens of Panama Canal Service.

Rubber Plant Investigations.—Local disease studies of rubbertrees; seed collection and distribution. Directed from Beltsville, Md.; local supervision by JULIUS MATZ, pathologist, in charge.

Sugar Plant Investigations.—Maintenance of collection of sugarcane varieties and related plants; sugarcane breeding. Directed from Beltsville, Md.; local supervision by JULIUS MATZ, pathologist, in charge.

COLORADO

Akron

United States Akron Field Station.—Five miles east of Akron (Chicago, Burlington & Quincy R. R.) on State Route 34 (Golden Belt Highway). Transportation arrangements can be made by communicating with J. F. BRANDON, superintendent. Telephone 86–R–2.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; forestry investigations; and cattle fattening and wintering experiment with calves, using locally grown feeds (cooperation with State Agricultural Experiment Station). J. F. BRANDON, associate agronomist, in charge.

Denver

Irrigation Studies (cooperation with Bureau of Reclamation).—Care of Bureau of Reclamation, New Customhouse, Denver 2, Colo.

Cereal Crops and Diseases.—Studies of the physiological actions of chemical weed killers, particularly those suitable for use in canals and other waterways to control aquatic vegetation. R. S. ROSENFELS, plant physiologist, in charge.

Fort Collins

State Agricultural Experiment Station (cooperative investigations).—Located at Colorado Agricultural College. Telephone, 1101.

Farm Buildings and Rural Housing.—Studies of potato storage and handling. A. D. EDGAR, agricultural engineer, in charge. In Mechanical Engineering Building.

Investigations in the housing of farm labor. General supervision by H. L. GARVER, senior agricultural engineer, Beltsville, Md.; P. F. GIFFORD, farm job analyst, in local charge, Colorado Agricultural College.

Farm Power and Machinery.—Investigations to develop machinery for reducing the labor and cost of production and harvesting of sugar beets (cooperation with Michigan Agricultural Experiment Station). S. W. MCBIRNEY, senior agricultural engineer, in charge. In Mechanical Engineering Building. Telephone 1101, extension 51.

Fruit and Vegetable Crops and Diseases.—Nature of disease resistance in potatoes, including breeding potatoes for resistance to virus, bacterial, fungus, and physiological diseases. L. A. SCHAAL, pathologist, in charge.

Onion improvement. A. M. BINKLEY, collaborator, in charge.

Sugar Plant Field Experiments (cooperation with State Agricultural Experiment Station).—Office and laboratory at Colorado Agricultural College. Can be reached by streetcar. Telephone, 1101. Field operations at Larimer County Hospital grounds, East Elizabeth Street (1 mile east of college). Telephone, 0113–J4.

Sugar Plant Investigations.—Agronomic i vestigations with sugar beets, G. W. Deming, associate agronomist, in charge. In Agronomy Building.

Greeley

Colorado Potato Experiment Station.—About 3½ miles northeast of railroad station at Greeley (Colorado & Southern Ry., and Union Pacific R. R.). Union Pacific motor bus connection between Greeley and LaSalle, 4 miles from Greeley. Transportation arrangements can be made by communicating with W. C. Edmundson, superintendent. Telephone, 636.

Fruit and Vegetable Crops and Diseases (cooperation with Colorado State Board of Agriculture and State Agricultural Experiment Station).—Investigations on potato breeding and culture; effects of spray materials on growth, yield, and disease transmission. W. C. Edmundson, horticulturist, in charge.

Investigations on onion culture, breeding, and diseases. W. C. Edmundson, horticulturist, in charge.

Investigations of bean and pea diseases and methods for their control; breeding and selection for resistance to disease, higher yields, and improved table quality. W. J. Zaumeyer, senior pathologist, in charge. (Field investigations conducted during summer months; laboratory and greenhouse work at Beltsville, Md.)

CONNECTICUT

New Haven

United States Forest Pathology Field Laboratory (cooperation with Yale University and U. S. Forest Service).—360 Prospect Street. Can be reached by streetcar or bus from railroad and bus stations. Telephone, 8–6789.

Forest Pathology.—Investigations of tree diseases, including those that affect timber stands, young natural stands and plantations, forest nurseries, street and shade trees, trees in national parks and Federal recreational areas; and of decay and deterioration of forest products. PERLEY SPAULDING, principal pathologist, in charge.

Storrs

Storrs Agricultural Experiment Station of the University of Connecticut (cooperative investigations).—Take New York, New Haven & Hartford Railroad to Willimantic, then take automobile to Storrs. Telephone, 9321.

Farm Electrification.—Investigations to develop electric equipment for pasteurizing milk on farms and small retail dairies; and to develop methods and equipment for maintenance of dry litter in poultry houses. W. A. JUNNILA, associate agricultural engineer, in charge.

DISTRICT OF COLUMBIA

Washington

United States National Arboretum.—Present entrance to the National Arboretum is at Twenty-eighth and M Streets NE.. There is no public transportation to the entrance, and the Arboretum is not open to the general public. Visitors should make arrangements with the acting director or superintendent. Telephone, Franklin 4116.

Develops and maintains for display and research living collections of native and exotic trees and shrubs adapted to this region; conducts research on woody plants in all phases not otherwise undertaken in the United States Department of Agriculture; makes available through publication results of such research. B. Y. MORRISON, principal horticulturist, in charge of the Division of Plant Exploration and Introduction, is acting director of the Arboretum; O. M. FREEMAN, associate botanist, is superintendent.

FLORIDA

Belle Glade

State Agricultural Experiment Station (cooperative investigations).—Take bus from West Palm Beach.

Cotton and Other Fiber Crops and Diseases.—Fiber laboratory studies of sansevieria, ramie, kenaf, and other fiber crops. Temporarily under supervision of J. F. JOYNER, Boynton, Fla.

Mechanical Processing of Farm Products.—Mechanical processing of special fibers, such as sansevieria, ramie, and kenaf, including the development, planting, and harvesting equipment. M. H. BYROM, agricultural engineer, in charge; headquarters at Boynton, Fla. (mail address, P. O. Box 787, Lake Worth, Fla.).

Boynton

Cooperative Field Investigations (cooperation with State Agricultural Experiment Station and Oscar Winchester, Boynton, Fla.).—About 4½ miles west of Boynton. Transportation arrangements can be made in advance with J. F. JOYNER, assistant agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Sansevieria, ramie, and other fiber crop investigations. J. F. JOYNER, assistant agronomist, in charge. (Experiments conducted at Flatwoods plantation, route 1, Boynton, Fla.)

Mechanical Processing of Farm Products.—Mechanical processing of special fibers, such as sansevieria, ramie, and kenaf, including the development, planting, and harvesting equipment. M. H. BYROM, agricultural engineer, in charge (mail address, P. O. Box 787, Lake Worth, Fla.).

Canal Point

United States Sugar Plant Field Station.—One-half mile north of post office in Canal Point (branch line of Florida East Coast Ry., from

Okeechobee City; also bus from West Palm Beach, Evernia and Olive Sts.), on Canal Point-Okeechobee City highway. Visitors will be met at West Palm Beach by automobile from station if advance arrangements are made. Telephone, Pohokee 548.

Sugar Plant Investigations.—Investigations in sugarcane breeding; production of improved disease-resistant varieties of cane; agronomic trials of new varieties. Directed by G. B. SARTORIS, senior pathologist, Beltsville, Md.; local supervision by B. A. BELCHER, agronomist, in charge.

Sugar sorghum investigations. Directed by G. B. SARTORIS, senior pathologist, Beltsville, Md.; local supervision by B. A. BELCHER, agronomist, in charge.

Sugarcane breeding investigations (cooperation with Louisiana Agricultural Experiment Station). Directed by G. B. SARTORIS, senior pathologist, Beltsville, Md.; local supervision by B. A. BELCHER, agronomist, in charge.

Coconut Grove

United States Plant Introduction Garden.— Thirteen miles south of Miami; 4½ miles south of South Miami; and 7 miles south of Coconut Grove. Arrangements for transportation to station can be made in advance; no public transportation service is available. Telephone, Perrine 2396.

Plant Exploration and Introduction.—Propagation, testing, and distribution of rare and valuable economic and ornamental plants from foreign countries and United States possessions. H. F. LOOMIS, senior agronomist, in charge.

Rubber Plant Investigations.—Study of growth and yield of rubber-bearing plants; special hevea breeding investigations supplementing tropical stations. H. F. LOOMIS, senior agronomist, in charge.

Fort Lauderdale

United States Bean Disease Field Laboratory (cooperation with State Agricultural Experiment Station).—501 South Andrews Avenue, near Florida East Coast Railroad and Greyhound stations, 2 miles from Seaboard Air Line Railway station. Telephone, 1871.

Fruit and Vegetable Crops and Diseases.—Investigations of watery soft rot of beans and other vegetable crops, including studies on relation of weather conditions to disease dissemination and on control measures under field and transportation conditions. W. D. MOORE, pathologist, in charge.

Gainesville

State Agricultural Experiment Station (cooperative investigations).—About 1½ miles from railroad stations at Gainesville (Atlantic Coast Line R. R., and Seaboard Air Line Ry.). Telephone, 1000, extension 112 (listed as University of Florida).

Cotton and Other Fiber Crops and Diseases.—Cotton breeding and improvement investigations. M. N. GIST, agent, in charge.

Forage Crops and Diseases.—Investigations of grasses and legumes adapted to the Southeastern States, including methods of pasture management and fertilization; utilization of crotalaria and other acid-tolerant legumes; and the value of cover and green-manure crops. G. E. RITCHEY, agronomist, in charge.

Range improvement and management (cooperation with Forest Service). G. E. RITCHEY, agronomist, in charge.

United States Field Laboratory for Tung Investigations (cooperation with State Agricultural Experiment Station).—University of Florida campus. Take bus running west on University Avenue as far as University campus. Telephone, 343.

Fruit and Vegetable Crops and Diseases.—Tung investigations, including breeding and selection for high-yielding varieties, cultural practices, mineral nutrition, maintenance of soil fertility, and suitability of soil types for tung production. F. S. LAGASSE, senior pomologist, in charge.

Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). F. S. JAMISON, collaborator, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on flue-cured tobacco. F. A. CLARK, collaborator, in charge.

Lake City

United States Forest Pathology Field Laboratory (cooperation with Forest Service).—Located at Southeastern Forest Experiment Station, Post Office Building. Field station at Olustee Experimental Forest, Olustee, Fla., 12 miles east of Lake City. Can be reached by bus from Lake City or Jacksonville.

Forest Pathology.—Investigations of pathological factors affecting pines and influencing production of turpentine and rosin. R. P. TRUE, associate pathologist, in charge.

Orlando

United States Horticultural Field Laboratory.—Located at 415 North Parramore Street (near West Amelia St.), 2½ miles from Atlantic Coast Line Railroad station; 1 mile from hotels and post office. Telephone, 2–3107.

Fruit and Vegetable Crops and Diseases.—Citrus, avocado, and other subtropical fruit breeding, production, disease, and soil-fertility investigations. F. E. GARDNER, principal pomologist, in charge.

Investigations in handling, storage, transportation, and market quality of fruits and vegetables. J. R. WINSTON, senior horticulturist, in charge.

GEORGIA

Albany

United States Pecan Field Laboratory.—Office and laboratory, 1503 North Jefferson Street, about 1 mile northwest of Union Station. Visitors will be met at station. Telephone, 327.

Fruit and Vegetable Crops and Diseases.—Studies in pecan-orchard management; factors affecting growth, flowering, and nut set and filling; biennial bearing; varietal adaptability; breeding. M. B. HARDY, associate pomologist, in charge.

Pecan disease investigations. J. R. COLE, pathologist, in charge.

Mineral nutrition and soil fertility investigations. J. H. HUNTER, associate soil technologist, in charge.

Athens

College of Agriculture of the University of Georgia (cooperative investigations).—On Seaboard Air Line Railway and Southern Railway. Telephone, 2151.

Cotton and Other Fiber Crops and Diseases (cooperation with State Agricultural Extension Service).—Cotton improvement in standardized one-variety communities. E. C. WESTBROOK, agent, in charge. In Agricultural Extension Building. Telephone, 2151, extension 33.

Farm Buildings and Rural Housing.—Investigations of crop storage in the Southeastern States, including grain, blue lupine seed, sweetpotatoes, and other crops. General supervision by W. V. HUKILL, senior agricultural engineer, Ames, Iowa; local supervision by J. W. SIMONS, agricultural engineer, in charge. In Barrow Hall. Telephone, 2151.

Forest Pathology Field Laboratory (cooperation with School of Forestry, University of Georgia, and United States Forest Service).—School of Forestry, University of Georgia. Can be reached by bus or taxi from railroad station. Telephone, 2861.

Forest Pathology.—Investigations of diseases that affect timber stands, reduce lumber production, and influence logging operations, including little leaf disease of pine and diseases of young natural stands and plantations. W. A. CAMPBELL, pathologist, in charge.

Atlanta

Cotton Field Office (cooperation with Extension Services of the Southeastern States).—514 Ten Forsyth Street Building. Can be reached by streetcar. Telephone, JA–1631.

Cotton and Other Fiber Crops and Diseases.—Regional office for cotton improvement in standardized one-variety communities in the Southeastern States. C. A. MCLENDON, senior agronomist, in charge.

Cairo

United States Field Laboratory for Tung Investigations.—On U. S. Route 84, in eastern part of town. Telephone, 40.

Fruit and Vegetable Crops and Diseases.—Investigations on tung propagation and culture, breeding and selection, maintenance of soil fertility, nutrition, and disease control. J. H. PAINTER, pomologist, in charge.

United States Sugar Plant Field Laboratory.—Office in Post Office Building at Cairo (Atlantic Coast Line R. R.). Field operations are 2½ miles north. Can be reached by driving north on Broad Street to fork in road, then taking left road about 2 miles to corrugated-iron sirup mill on left. Visitors will be met at Post Office Building by automobile if advance arrangements are made. Telephone, 284.

Sugar Plant Investigations.—Studies of sugarcane varieties for sirup production and of methods of cultivation; testing and introduction of improved disease-resistant varieties. E. S. Lyons, soil technologist, in charge.

Sugar sorghum investigations. E. S. Lyons, soil technologist, in charge.

Experiment

Georgia Experiment Station (cooperative investigations).—Located on edge of Griffin, Ga. (Central of Georgia Ry. and Southern Ry.). Telephone, 3955.

Cereal Crops and Diseases.—Investigations of fall-sown cereals (wheat, oats, barley, and rye), including studies of diseases, winter hardiness, varieties, breeding, culture, and such. Directed from Beltsville, Md.; local supervision by R. P. Bledsoe, of the experiment station.

Investigations of practical methods for the control of nutgrass on agricultural lands, particularly the use of herbicides and the relationships of the physiology of the plant to cultural and soil-management practices. E. P. Carter, assistant plant pathologist, in charge.

Cotton and Other Fiber Crops and Diseases.—General cotton breeding and improvement investigations. W. W. Ballard, associate agronomist, in charge.

Forage Crops and Diseases.—Miscellaneous legume breeding and improvement investigations; disease investigations of miscellaneous legumes and soybeans. J. L. Weimer, senior pathologist, in charge.

Soybean investigations. U. R. Gore, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Investigations on sweetpotato culture and variety improvement and testing. J. B. EDMOND, collaborator, in charge. Telephone, 4107.

Peanut investigations, including fertilizers, spacing, seed stock, quality, variety, and hybrid-strain testing. B. B. HIGGINS, collaborator, and W. K. BAILEY, associate horticulturist, in charge. Telephone, 3955.

Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). F. F. COWART, collaborator, in charge.

Fort Valley

United States Horticultural Field Laboratory.—About 2 miles east of Fort Valley going out Church Street. Laboratory is about one-half mile from the highway north on the Baird plantation. Visitors will be met by automobile. Telephone, 29–J.

Fruit and Vegetable Crops and Diseases.—Investigations on peach breeding; phony peach and other diseases of peaches. J. H. WEINBERGER, pomologist, in charge.

Savannah

United States Barbour Lathrop Plant Introduction Garden.—Twelve and one-half miles southwest of Savannah (Atlantic Coast Line R. R., Seaboard Air Line Ry., Southern Ry., and Central of Georgia Ry.), on U. S. Route 17. Southeastern Stages and Greyhound and Red Line busses pass the station. Telephone, Co. 15–J–2 short.

Plant Exploration and Introduction.—Propagation, testing, and distribution of rare and valuable economic and ornamental plants from foreign countries and United States possessions. D. A. BISSET, chief scientific aid, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on camphor-basil plants. D. A. BISSET, chief scientific aid, in charge.

Tifton

Georgia Coastal Plain Experiment Station (cooperative investigations).—About 2 miles northwest of Tifton (Atlanta, Birmingham & Atlantic Ry. and Atlantic Coast Line R. R.), on State Route 7. Continue on highway for 1½ miles, then turn to road on left. Transportation arrangements can be made by calling the station. Telephone, 500.

Cereal Crops and Diseases.—Breeding corn varieties and hybrids that are adapted to Coastal Plain conditions and are high yielding, resistant to diseases and rice weevil attack, and drought resistant. Conducting performance trials of corn hybrids at various locations on the Coastal Plain. Maintaining inbred lines and producing foundation single crosses of hybrids in commercial production. W. H. FREEMAN, agronomist, in charge.

Yield tests of wheat and oats. W. H. FREEMAN, agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Cotton breeding and improvement investigations. J. G. JENKINS, associate agronomist, in charge.

Farm Electrification.—Research on engineering aspects of curing of bright-leaf and shade-grown tobacco. General supervision by O. A. BROWN, Oxford, N. C.; local supervision by J. M. STANLEY, assistant agricultural engineer, in charge.

Farm Power and Machinery.—Research on peanut production and harvesting machinery. General supervision by I. F. REED, Auburn, Ala.; local supervision by W. D. KENNEY, assistant agricultural engineer, in charge.

Forage Crops and Diseases.—Miscellaneous legume improvement and general forage and pasture investigations. J. L. STEPHENS, agronomist, in charge. Telephone, 703.

Grass breeding, improvement, and seed-production studies. G. W. BURTON, senior geneticist, in charge.

Turf production and management. G. W. BURTON, senior geneticist, in charge.

Pasture and range management (cooperation with Forest Service). H. J. HODGSON, assistant agronomist, in charge.

Soybean improvement and production investigations. J. L. STEPHENS, agronomist, in charge.

Fruit and Vegetable Crops and Diseases.—Investigations on sweetpotato improvement and culture. OTIS WOODWARD, collaborator, in charge.

Peanut investigations, including fertilizers, spacing, seed-stock quality, variety, and hybrid-strain testing. Directed from Beltsville, Md.; NAOMI C. WOODROOF, agent, in charge.

Investigations of diseases of vegetable-seedling plants, particularly tomatoes, grown for shipment to the North; cultural operations in seedling-plant production. E. K. VAUGHAN, pathologist, in charge.

Nematology.—Investigations relating to nematode diseases of plants and their control, principally root knot and other nematode pests of the South. Soil fumigation studies. J. H. MACHMER, associate nematologist, in charge.

Tobacco, Medicinal, and Special Crops.—Crop-rotation studies, tobacco seedbed, fertilizer, and varietal tests, and improvement in cultural methods. J. M. CARR, agent, in charge.

Tobacco disease investigations. J. G. GAINES, associate pathologist, in charge.

IDAHO

Aberdeen

Aberdeen Substation, State Agricultural Experiment Station (cooperative investigations).—Three-fourths mile from Union Pacific Railroad station. Transportation arrangements can be made by telephoning substation. Telephone, 13–J.

Cereal Crops and Diseases.—Barley, wheat, oats, and flax production, breeding, disease, and quality investigations; development of improved breeding methods. HARLAND STEVENS, agronomist, in charge.

Regional barley and oat work (cooperation with stations in States of Pacific Northwest). HARLAND STEVENS, agronomist, in charge.

Boise

Irrigation Studies (cooperation with U. S. Bureau of Reclamation and State Agricultural Experiment Station).—Care of Ada County Weed Control, Box 576, Meridian, Idaho.

Cereal Crops and Diseases.—Investigations on methods for weed control in irrigated ditches and on irrigated land. J. M. HODGSON, agent, in charge.

Moscow

State Agricultural Experiment Station (cooperative investigations).—About one-half mile from railroad station at Moscow (Great Northern Ry., Northern Pacific Ry., and Oregon-Washington Railroad & Navigation Co.). Transportation arrangements can be made by telephoning station. Telephone, 8162.

Cereal Crops and Diseases.—Investigations on the control of noxious weeds. C. I. SEELEY, agent, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on poppies. C. I. SEELEY, agronomist, in charge.

Twin Falls

United States Sugar Plant Field Laboratory.—In New Entomology Building, 1 mile north on Blue Lake Boulevard from post office in

Twin Falls (Union Pacific R. R.; can also be reached by bus from Minidoka, Pocatello, and Jerome, Idaho, or from Wells, Nev.).

Sugar Plant Investigations.—Ecological investigations of weed hosts in relation to curly top. R. L. Piemeisel, physiologist, in charge.

Agronomic and plant pathological investigations on sugar beet production in relation to curly top disease. A. M. Murphy, assistant pathologist, in charge, under supervision of R. L. Piemeisel, physiologist.

ILLINOIS

Chicago

United States Market Pathology Laboratory (cooperation with U. S. Production and Marketing Administration and University of Chicago).—Laboratory investigations conducted in 103 Botany Building, University of Chicago. Telephone, Midway 0625.

Fruit and Vegetable Crops and Diseases.—Investigations in the handling, transportation, and storage of fruits and vegetables, with particular reference to diseases that cause spoilage during transit and on the market. G. B. Ramsey, senior pathologist, in charge.

Urbana

State Agricultural Experiment Station (cooperative investigations).—About 1½ miles from railroad station at Urbana (Cleveland, Cincinnati, Chicago & St. Louis Ry.). Can be reached by bus or streetcar from railroad station at either Urbana or Champaign.

Cereal Crops and Diseases.—Loose smut of wheat investigations. W. M. Bever, pathologist, in charge. Telephone, 7–3968.

Pathologic phases of the wheat, oats, and barley breeding program. W. M. Bever, pathologist, in charge.

Farm Buildings and Rural Housing.—Investigations of factors affecting the storage of grains, including corn and soybeans (cooperation with Bureau of Entomology and Plant Quarantine). Directed from Ames, Iowa; local supervision, L. E. HOLMAN, agricultural engineer, in charge. In Agricultural Engineering Building.

Forage Crops and Diseases.—Alfalfa culture and varietal testing; clover and general forage seed production studies; disease investigations. DAVID HEUSINKVELD, assistant agronomist, in charge. Telephone, 7–3968.

Study of organisms causing soybean diseases and development of control methods (cooperation with United States Regional Soybean Laboratory and State agricultural experiment stations of the North Central States). W. B. ALLINGTON, pathologist, in charge. Telephone, 7–3622.

United States Regional Soybean Laboratory (*cooperation with 12 North Central States, 12 Southern States, and Bureau of Agricultural and Industrial Chemistry*).—In Davenport Hall, University of Illinois. Telephone, 7–3622.

Forage Crops and Diseases.—Research on soybeans in the North Central States and Southern States involving breeding and development of improved varieties for industrial purposes; physiological and chemical studies; pathological studies in collaboration with the Division of Forage Crops and Diseases; and agronomic studies relating to cultural and harvesting methods. J. L. CARTTER, director and senior agronomist, in charge.

INDIANA

La Fayette

Agricultural Experiment Station, Purdue University (*cooperative investigations*).—At West La-fayette, about 1½ miles from La Fayette.

Can be reached by streetcar from La Fayette. Telephone, 92–2479.

Cereal Crops and Diseases.—Breeding and genetic experiments with dent and sweet corn and popcorn, with special emphasis on breeding for disease resistance and resistance to European corn borer (cooperation with Bureau of Entomology and Plant Quarantine). A. M. BRUNSON, senior agronomist, in charge.

Breeding disease- and insect-resistant varieties of wheat, oats, and barley; pathologic studies on the leaf rusts. R. M. CALDWELL, collaborator, in charge.

Farm Electrification.—Research on the attractiveness of electric radiation to corn borer moths and development of electric traps for destroying them. Directed from Beltsville, Md.; local supervision by J. G. TAYLOR, assistant agricultural engineer, in charge.

Forage Crops and Diseases.—Alfalfa breeding investigations. H. H. KRAMER, collaborator, in charge.

Soybean disease investigations. R. M. CALDWELL, collaborator, in charge.

Investigation of breeding and culture of soybeans in relation to their adaptation for industrial utilization. A. H. PROBST, associate agronomist, in charge. Telephone, 92–2177.

IOWA

Ames

State Agricultural Experiment Station (cooperative investigations).—About 1 mile west of railroad station. Can be reached by bus, interurban railway, or streetcar. Telephone, 2500.

Cereal Crops and Diseases.—Breeding field corn for the farm belt; performance trials of corn hybrids; development of improved methods of breeding corn; and effect of date and method of planting corn and of fertilizers on corn quality and yield. G. F. SPRAGUE, agronomist, in charge. Telephone 2500, extension 226.

Breeding oat, barley, and wheat varieties resistant to diseases, and studies on diseases of these crops and their control. H. C. MURPHY, pathologist, in charge. Telephone 2500, extension 226.

Farm Buildings and Rural Housing.—Headquarters for grain storage studies, including *corn storage studies* carried on at this station in cooperation with the Production and Marketing Administration; *wheat storage studies* in cooperation with the Bureau of Entomology and Plant Quarantine, Production and Marketing Administration, Kansas and North Dakota Agricultural Experiment Stations, with field work in these States completed and final reports in preparation at Ames; *grain sorghum studies* in cooperation with the Bureau of Entomology and Plant Quarantine, Production and Marketing Administration, and Kansas Agricultural Experiment Station; field work in Kansas completed and reports in preparation at Ames; *soybean and corn storage studies* in cooperation with the Bureau of Entomology and Plant Quarantine, Production and Marketing Administration, and the Illinois Agricultural Experiment Station; and *crop storage studies* in the South in cooperation with the University of Georgia. W. V. HUKILL, senior agricultural engineer, in charge.

Forage Crops and Diseases.—Alfalfa, clover, and grass culture, production, breeding, and improvement investigations. C. P. WILSIE, collaborator, in charge.

Investigation of breeding and culture of soybeans in relation to their adaptation to industrial utilization. Diseases of soybeans and other forage crops. C. R. WEBER, associate agronomist, in charge. Telephone, 2500, extension 226.

Fruit and Vegetable Crops and Diseases.—Breeding of tree fruits. H. A. LANTZ, agent, in charge. Telephone, 566.

Investigation on onion culture, breeding, and diseases. E. S. HABER, associate horticulturist, in charge. Telephone, 438.

Cooperative growing and testing of promising seedling potatoes. A. T. ERWIN, associate horticulturist, in charge. Telephone, 438.

Soils, Fertilizers, and Irrigation.—Soil microbiological research with particular emphasis on the organisms associated with plant roots. F. E. CLARK, bacteriologist, in charge.

Soil Survey.—Subheadquarters, Northern States. See Maryland, Beltsville, page 69, Soil Survey Office. G. D. SMITH, soil scientist, in charge. 2 Landscape Architecture Building. Extension 552.

KANSAS

Colby

Colby Branch Station, State Agricultural Experiment Station (cooperative investigations).—One mile west and one-half mile south of Colby post office; adjoining city limits just off U. S. Route 24. Can be reached by automobile, or transportation arrangements can be made by telephoning E. H. COLES, superintendent. Telephone, 131 (listed as Experiment Farm).

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions. J. B. KUSKA, associate agronomist, in charge.

Garden City

Garden City Branch Station, State Agricultural Experiment Station (cooperative investigations).—Four and one-half miles northeast of Garden City (Atchison, Topeka & Santa Fe Ry.), on U. S. Route 50. Can be reached by automobile, or transportation arrangements can be made by telephoning L. M. SLOAN, superintendent. Telephone, 32–F–3 (listed as Experiment Farm).

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions. H. L. STOUT, agent and junior agronomist. in charge.

Hays

Fort Hays Branch Station, State Agricultural Experiment Station (cooperative investigations).—About one-half mile south of Hays (Union Pacific R. R.). Can be reached by automobile, or transportation arrangements can be made by telephoning L. C. AICHER, superintendent. Telephone, 123 (listed as Fort Hays Experiment Station).

Cereal Crops and Diseases.—Agronomic investigations of wheat, sorghum, barley, oats, and corn. Plant breeding work with wheat, sorghum, and barley. Agronomic investigations include varietal comparisons; experiments with rates, dates, and seedbed methods; and quality studies of the several crops. A. F. SWANSON, agronomist, in charge.

Investigations on the physiology and growth of weeds; the use of competitive crops; the effect of cultural practices and crop sequences, and of chemical weed killers on weed control (cooperation with State Department of Agriculture and other action agencies). F. L. TIMMONS, agronomist, in charge.

Forage Crops and Diseases.—Alfalfa and sweetclover seed production, pastures and range, grass breeding, and improvement investigations. F. E. MEENEN, agent, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions. A. B. ERHART, associate agronomist, in charge.

Manhattan

State Agricultural Experiment Station (cooperative investigations).—About 2 miles northwest of railroad station (Union Pacific R. R. and Chicago, Rock Island & Pacific Ry.) on the northwestern limits of the city. Can be reached by bus.

Cereal Crops and Diseases.—Research on the rusts of wheat and oats, including breeding for resistance, identification of physiologic races (especially those of leaf rust of wheat), studies on the inheritance of resistance, on the relation of leaf rust infection to the physiology, yield, and grain quality of wheat, and of factors governing the initiation and development of rusts epiphytotics. C. O. JOHNSTON, pathologist, in charge. Telephone, 3411.

Research on the leaf blotches and foot rots of wheat, especially the speckled leaf blotch, take-all, and dry-land foot rot. Studies on factors governing the development of those diseases, measures for control, and sources of resistance. Studies on the organisms in culture and on the host plant. HURLEY FELLOWS, associate pathologist, in charge.

Agronomic investigations of wheat, oats, and sorghum, especially breeding for better grain and plant characters in combination with resistance to diseases and insects. E. G. HEYNE, agent, in charge.

Quality evaluation of wheat varieties produced in the breeding programs of the hard red winter wheat region, and studies on the relationship of protein, grain texture, and other characteristics to the value of grain for commercial usage in the production of bakery products. Also, the relationship of environmental factors to the quality characteristics of grain. J. A. SHELLENBERGER, agent, in charge. (Hard Winter Wheat Quality Laboratory.)

Agronomic and breeding investigations with corn and popcorn, with special reference to the development of high-yielding strains resistant to lodging and to diseases, insects, and drought. L. A. TATUM, associate agronomist, in charge.

Forage Crops and Diseases.—Alfalfa breeding and improvement investigations. C. O. GRAND-

FIELD, associate agronomist, in charge. Telephone, 2048.

Grass breeding and improvement; pastures and range investigations. K. L. ANDERSON, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Physical and chemical changes in dry land and soils resulting from rotation and tillage practices. L. B. OLMSTEAD, physicist, in charge. Telephone, 2048.

KENTUCKY

Lexington

State Agricultural Experiment Station (cooperative investigations).—About 1 mile from downtown Lexington. Telephone, 6800.

Cotton and Other Fiber Crops and Diseases.—Hemp fiber investigations. L. E. HESSLER, associate chemist, in charge.

Forage Crops and Diseases.—Investigations with red clover, including studies of diseases. E. N. FERGUS, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). W. D. VALLEAU, collaborator, in charge.

Soil Survey.—Subheadquarters, Southern States, See Tennessee, Knoxville: Soil Survey Office, page 112. W. S. LIGON, agent, soil scientist, in charge. Room 136. Telephone, 6800, extension 2.

Tobacco, Medicinal, and Special Crops.—Investigations on burley tobacco. W. D. VALLEAU, collaborator, in charge.

LOUISIANA

Baton Rouge

State Agricultural Experiment Station (cooperative investigations).—Two and one-half miles south of Baton Rouge. Can be reached by bus. Telephone, 2–4781.

Cereal Crops and Diseases.—Corn breeding and cultural investigations, breeding field corn for the South, performance trials of corn hybrids and hybrid seed-corn production. Experiments on the relation of husk characters to damage by weevils and corn earworm. HUGO STONEBERG, associate agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Cotton disease investigations, with special reference to control methods. D. C. NEAL, senior pathologist, in charge.

Cotton breeding and improvement investigations. J. R. COTTON, associate agronomist, in charge.

Cotton improvement in standardized one-variety communities. I. W. CARSON, agent, in charge.

Forage Crops and Diseases.—Investigation of breeding and culture of soybeans in relation to their adaptation to industrial utilization. J. P. GRAY, collaborator, in charge.

Soybean disease investigations. ST. J. P. CHILTON, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Sweetpotato breeding and improvement, variety testing, and cultural investigations. J. C. MILLER, collaborator, in charge.

Studies of sweetpotato diseases and their control and of varietal resistance to diseases. T. T. AYERS, associate pathologist, in charge. Telephone, 2780.

Potato diseases, including breeding varieties resistant to insects and diseases and especially adapted to the requirements of the early southern crop. T. P. DYKSTRA, senior pathologist, in charge. Telephone, 4780.

Investigations on onion culture and resistance to diseases and insects. J. C. MILLER, collaborator, in charge.

Breeding and testing improved vegetable

strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). J. C. Miller, collaborator, in charge.

Bogalusa

United States Field Laboratory for Tung Investigations.—In Post Office Building, 301 Avenue B. Telephone, 120. Orchard experiments at Mississippi Cooperative Tung Farm, 13 miles east of Bogalusa, on road to Poplarville, Miss.

Fruit and Vegetable Crops and Diseases.—Investigations on tung propagation and culture, breeding and selection, testing varieties, maintenance of soil fertility, mineral nutrition, and disease control. G. F. Potter, principal physiologist, in charge.

Crowley

Rice Station, State Agricultural Experiment Station (cooperative investigations).—One mile west of Crowley on U. S. Route 90. Communicate with the superintendent regarding transportation arrangements. Telephone, 196.

Cereal Crops and Diseases.—Cultural, including fertilizer and rotation, experiments on rice. R. K. Walker, superintendent, in charge.

Rice varietal testing, including introductions, hybridization, selecting, and genetics. N. E. Jodon, associate agronomist, in charge.

Forage Crops and Diseases.—Investigations of pasture and forage crops in rotation with rice. R. K. Walker, superintendent, in charge.

Houma

United States Sugar Plant Field Station.—On Southdown plantation on Little Bayou Black at end of Lafayette Street, about 1 mile west of courthouse in Houma. Can be reached by bus from 400 North Rampart Street, New Orleans; or by bus from Schriever (Southern Pacific R. R.), about 10 miles from Houma. Visitors will be met at Houma by automobile from station if advance arrangements are made.

Farm Power and Machinery (*cooperation with Bureau of Entomology and Plant Quarantine*).—Investigations to develop and improve equipment and methods for planting, cultivating, and harvesting sugarcane. R. M. RAMP, agricultural engineer, in charge. Telephone, 499–M.

Sugar Plant Investigations.—Investigations of sugarcane diseases. E. V. ABBOTT, pathologist, in charge.

Investigations of sugarcane varietal and agronomic problems. GEORGE ARCENEAUX, senior agronomist, in charge.

Investigations of sugarcane physiology. J. I. LAURITZEN, senior physiologist, Beltsville, Md., in charge.

Soil fertility investigations. Fertilizer requirements of different soils for sugarcane and effect on maturity, yield, and quality of the cane; soil-type adaptability. L. G. DAVIDSON, associate chemist, in charge.

Jeanerette

Iberia Livestock Experiment Station (*cooperative investigations*).—Four miles west of Jeanerette (Missouri Pacific R. R. and Southern Pacific R. R.), on the main highway from Jeanerette to New Iberia. Can be reached by bus from either place, or visitors will be met by automobile from field station. Telephone, 89–J (listed as Iberia Livestock Experiment Station, U. S. Bureau of Animal Industry).

Forage Crops and Diseases.—Pasture and grazing studies (cooperation with Bureau of Animal Industry). A. L. BAKER, superintendent, in charge.

New Orleans

United States Forest Pathology Field Laboratory (cooperation with Forest Service).—1008 Federal Office Building. Telephone, Magnolia 5271.

Forest Pathology.—Investigations of decay and disease defects of lumber and other forest products, including sap stains; and tree diseases, including those that affect timber stands, young natural stands and plantations, and street and shade trees. R. M. LINDGREN, senior pathologist, in charge.

Shreveport

United States Pecan Field Laboratory.—606 Courthouse. Telephone, 2–5–23. U. S. Pecan Field Station at Robson, 14 miles southeast of Shreveport on State Route 20.

Fruit and Vegetable Crops and Diseases.—Studies on pecan orchard management; factors influencing growth, flowering, and nut setting and filling; mineral nutrition; soil fertility; and disease control. A. O. ALBAN, soil technologist, in charge. R. H. SHARPE, assistant pomologist and superintendent of station at Robson.

MAINE

Orono

State Agricultural Experiment Station (cooperative investigations).—Railroad station (Maine Central R. R.) at Bangor, Maine, 8 miles from Orono. Bus service from Bangor to Orono. Telephone, 441.

Soils, Fertilizers, and Irrigation.—Soil management and fertilization of potatoes; fertilizer requirements and placement of potatoes; relation of fertilization to potato quality and disease susceptibility; effect of fertilization and green manures on the nutrient status of soils. ARTHUR HAWKINS, associate soil scientist, in charge.

Presque Isle

Aroostook Farm, State Agricultural Experiment Station (cooperative investigations).—One and three-fourths miles south of railroad station at Presque Isle (Bangor & Aroostook R. R. and Canadian Pacific Lines in Maine). Transportation arrangements can be made by telephoning R. V. AKELEY at Aroostook Farm, 154–4 or 154–12.

Fruit and Vegetable Crops and Diseases.—Cultural investigations of potatoes. P. M. LOMBARD, horticulturist, in charge.

Potato breeding studies. R. V. AKELEY, plant breeder, in charge.

Investigations of potato diseases and experiments with control measures. E. S. SCHULTZ, principal pathologist, in charge. (Field investigations during summer months; laboratory and greenhouse work at Beltsville, Md.)

MARYLAND

Beltsville

Plant Industry Station.—About 14 miles northeast of Washington; 1 mile southwest of Beltsville (Baltimore & Ohio R. R.). May be reached from Washington by train, suburban trolley, bus, or automobile on the Washington-Baltimore Boulevard. Telephone, TO–6400.

Cereal Crops and Diseases.—Barley production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the method of control, both by treatment and production of resistant types. G. A. WIEBE, principal agronomist, in charge.

Corn production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the method of control, both by treatment and the production of resistant types. M. T. Jenkins, principal agronomist, in charge.

Seed-flax production, breeding, disease, and quality investigations. A. C. Dillman, collaborator, in charge.

Grain-sorghum production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the method of control, both by treatment and the production of resistant types. J. H. Martin, senior agronomist, in charge.

Oat production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the method of control, both by treatment and the production of resistant types. T. R. Stanton, senior agronomist, in charge.

Rice production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the method of control, both by treatment and the production of resistant types. J. W. Jones, principal agronomist, in charge.

Wheat production, breeding, disease, and quality investigations. Field and greenhouse experiments on the diseases affecting this crop and the methods of control, both by treatment and the production of resistant types. Also investigations on milling and baking qualities of different selections of wheat. S. C. Salmon, principal agronomist, in charge.

Weed investigations to develop control methods. Experiments on weed control by the use of chemicals and their aftereffects on the soil and heat and cultural methods. L. W. Kephart, senior agronomist, in charge.

In charge of field, greenhouse, and laboratory operations of the Division in connection with agronomic, pathologic, and physiologic work; conducts research on breeding, genetics, and physiology of the small grains. J. W. Taylor, agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Administration and direction of field research throughout the Cotton Belt (including southwestern United States) and in Oregon and Wisconsin on cotton and other fiber crops, in cooperation with other Government agencies, State experiment stations and extension services, commercial interests, and individual farmers and growers. Under general direction of Beltsville project leaders as follows:

Cotton breeding, genetics, and improvement investigations. J. O. WARE, senior agronomist, in charge.

Cotton pathological and physiological investigations. H. D. BARKER, principal pathologist, in charge.

Cotton improvement in standardized one-variety communities. C. B. DOYLE, principal agronomist, in charge.

Investigations of fibers other than cotton. B. B. ROBINSON, senior agronomist, and E. E. BERKLEY, senior technologist.

Laboratory work on field damage to cotton. P. B. MARSH, physiologist, in charge.

Laboratory work on structural and physical properties of natural cellulosic fibers. E. E. BERKLEY, senior technologist, and L. E. HESSLER, chemist.

Forage Crops and Diseases.—Alfalfa investigations on selection and breeding for disease and insect resistance and increased seed production; testing varieties and selections for regional adaptation; and physiological and pathological studies relating to the longevity of stands. H. M. TYSDAL, principal agronomist, in charge.

Clover investigations on selection and breeding for disease and insect resistance in red, Ladino, and sweetclovers; cultural studies and varietal testing of zigzag, crimson, and other clover species. E. A. HOLLOWELL, senior agronomist, in charge.

Soybean and related legume investigations: Testing of new introductions and varieties;

development of improved varieties by selection and hybridization; and production of seed of desirable strains. W. J. MORSE, principal agronomist, in charge.

Lespedeza, vetch, and lotus investigations: Testing of different species and varieties; increase of seed and cultural studies of desirable species; and studies of other acid-tolerant legumes. ROLAND MCKEE, senior agronomist, in charge.

Grass breeding and improvement investigations on selection and breeding of grasses adapted to geographic regions. O. S. AAMODT, head agronomist, in charge.

Pasture establishment, improvement, and management investigations: Testing of strains for mixtures of grasses and legumes under various cutting and grazing practices; uniform nursery testing; and seed production of new grasses. (Cooperation with the Bureaus of Dairy Industry and Animal Industry.) M. A. HEIN, senior agronomist, in charge.

Turf investigations: Testing of various grasses for suitable putting greens; mixtures of grasses for use on fairways; fertilizer studies; and studies of turf diseases and their control. (Cooperation with the Green Section, U. S. Golf Association, under the supervision of F. V. GRAU.) O. S. AAMODT, head agronomist, in charge.

Disease investigations: Identification of pathogenic organisms known to cause diseases of forage grasses and legumes; testing under controlled conditions for resistant plant material of known disease-susceptible strains and varieties; and other control methods. J. L. ALLISON, senior pathologist, in charge.

Forest Pathology.—Investigations of diseases of American and Asiatic chestnuts; breeding, selecting, and propagating resistant varieties (cooperation with Forest Service). G. F. GRAVATT, senior pathologist, in charge.

Identification of wood-rotting fungi from cultures, maintenance of large fungus culture collection and herbarium of tree-disease specimens (cooperation with Forest Service). R. W. DAVIDSON, pathologist, in charge.

Investigations of deterioration of oak and hemlock tanbark (cooperation with Bureau of Agricultural and Industrial Chemistry) and diseases of bamboo. M. E. FOWLER, pathologist, in charge.

Investigations of virus diseases of some forest and shade trees (cooperation with National Park Service and Bureau of Entomology and Plant Quarantine). LEE M. HUTCHINS, head pathologist, in charge.

Investigations of decay in housing (cooperation with Forest Service, Bureau of Entomology and Plant Quarantine, Navy Department, War Department, Federal Public Housing Authority, and Baltimore Housing Authority). CARL HARTLEY, principal pathologist, in charge.

Investigations of cause and control of shade-tree diseases (cooperation with National Park Service and Bureau of Entomology and Plant Quarantine). CURTIS MAY, principal pathologist, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding apples and pears for hardiness, quality, and disease resistance; evaluation of varietal strains; nutritional studies; hormone effects. C. P. HARLEY, senior physiologist.

Investigations of diseases of deciduous tree fruits; development and testing of new fungicide materials. J. C. DUNEGAN, senior pathologist, in charge.

Breeding peaches, plums, and apricots for improved quality, hardiness, and disease resistance; nutritional studies with peaches; orchard-practice investigations. LEON HAVIS, senior horticulturist, in charge.

Breeding disease-resistant grapes for a humid climate. G. M. DARROW, principal pomologist, in charge.

Breeding strawberries and blueberries for improved quality, adaptation, and disease resistance. G. M. Darrow, principal pomologist, in charge.

Cause and control of strawberry and blueberry diseases. J. B. Demaree, senior pathologist, in charge.

Breeding, selection, and variety testing of filberts, walnuts, chestnuts, and hickories; administrative headquarters for pecan and tung investigations conducted at various field laboratories. H. L. Crane, principal horticulturist, in charge.

Sweetpotato breeding, culture, and diseases. C. E. Steinbauer, plant pathologist, in charge.

Diseases of tomatoes, cucurbits, and related crops. S. P. Doolittle, senior pathologist, in charge.

Production and improvement of tomato, cucurbits, and leafy vegetables. V. R. Boswell, principal horticulturist, in charge.

Pea and bean diseases and improvement. W. J. Zaumeyer, senior pathologist, in charge.

Headquarters for peanut production; improvement and disease investigations conducted cooperatively at various field locations. J. H. Beattie, senior horticulturist, in charge.

Onion breeding and genetics. H. A. Jones, principal horticulturist, in charge.

Vegetable-seed culture, production, and standardization. E. H. Toole, senior physiologist, in charge.

Suitability of vegetable varieties and strains for dehydration. J. S. Caldwell, senior physiologist, in charge.

Vitamin content of vegetable varieties and strains as influenced by various factors. B. D. Ezell, biochemist, in charge.

Potato production and soil fertility investigations. H. A. Jones, principal horticulturist, in charge.

Potato breeding and genetics. F. J. Stevenson, principal geneticist, in charge.

Potato disease investigations. E. S. Schultz, principal pathologist, in charge.

Breeding, selection, and testing Easter lilies, garden lilies, daffodils, tulips, snapdragons, carnations, chrysanthemums, stocks, phlox, azaleas, lilacs; improved methods of greenhouse forcing; nutrition studies with florist crops. S. L. EMSWELLER, principal horticulturist, in charge.

Diseases of florist crops and other ornamentals. PHILIP BRIERLEY, senior pathologist, in charge.

Headquarters for investigations on methods of handling, transportation, and storage and on market diseases of fruits and vegetables; cold-storage laboratory, operated in connection with studies of fruit and vegetable storage and transportation and their physiological response to different storage conditions; effects of storage temperature and humidity conditions in relation to disease development and market quality. D. F. FISHER, principal horticulturist, in charge.

Mycology and Disease Survey.—Maintenance of a fungus herbarium, identification of fungi, monographic and life history studies of fungi. J. A. STEVENSON, principal mycologist, in charge.

Plant Disease Survey. Collecting information on the current plant disease situation in the United States; distributing this information through a forecasting service, an index of diseases, and a periodical, The Plant Disease Reporter. P. R. MILLER, pathologist, in charge.

Nematology Investigations.—Root-knot nematode investigations.

Bulb or stem nematode and related forms investigations.

Sugar beet nematode and related forms investigations.

Meadow, wheat and grass, citrus, and other plant-parasitic- and plant-pathogenic-nematode groups investigations.

Soil and fresh- and marine-waters nematode investigations.

Parasitic and pathogenic to insects and other invertebrates nematode investigations.

Investigations are carried out under field, greenhouse, and laboratory conditions, and include the testing of soil fumigants for nematocidal properties and of the methods of applying them in the soil. G. Steiner, principal nematologist, in charge of all nematology investigations.

Plant Exploration and Introduction.—Plant introduction and placement introduces living plants from all parts of the world by exploration, exchange, or purchase; processes all introductions through sanitary inspection or quarantine; keeps permanent inventory records; and places the introductions in the hands of the growers after preliminary test. B. Y. Morrison, principal horticulturist, and C. O. Erlanson, senior ecologist, in charge.

Plant propagation and preliminary field testing investigations, headquarters office for the United States Plant Introduction Gardens, undertakes the propagation of plant introduction as needed for placement; conducts investigations on new and better methods of propagating plants; makes preliminary tests on introduced plants; and investigates all problems connected with new plants that show promise as crops for the United States. B. Y. Morrison, principal horticulturist, and W. E. Whitehouse, senior horticulturist, in charge.

Plant identification and bibliographic investigations serve the Bureau and other public and private agencies in a botanical capacity, including the identification of plant materials, review of technical names, maintenance of indices of vernacular and technical names for all parts of the world, preparation of summaries of available information on economic plants and their relatives, and the preparation of taxonomic and floristic monographs on flowering plants. S. F. Blake, senior botanist, in charge.

Rubber Plant Investigations.—Administration and direction of field programs of research on rubber-bearing plants. Liaison with other Government agencies, private companies, and individuals interested in sources of natural rubber. Laboratory testing of rubber-bearing plants. E. W. Brandes, head pathologist, in charge.

Soils, Fertilizers, and Irrigation.—Soil-management and irrigation research. Organizes and directs research in soil-management and improvement practices under field conditions, as related to soil type, climate, and other factors in humid, dry-land, and irrigated regions. W. W. PATE, agronomist, in charge.

Basic soil and plant relationships. Studies relating to types of soil, their physical and chemical composition and properties, basic fertility, chemical, physical, and biological changes occurring in soils, processes of plant nutrition, and the relationship of various factors to crop production and quality. L. T. ALEXANDER, soil scientist, in charge.

Fertilizer and agricultural lime. Investigates preparation, technology, manufacture, properties, and use of fertilizer and liming materials and soil amendments. K. D. JACOB, chemist, in charge.

Soil Survey.—National Headquarters. Soil types are identified, defined, and classified on the basis of their characteristics, and county soil maps are prepared showing their distribution. Soil survey reports are written, describing the soil types in terms of both their morphology and their crop adaptability and production under farm practices. This work is carried on cooperatively with the State agricultural experiment stations throughout the country and in many counties with the Soil Conservation Service or other interested Federal agencies. Soil maps and relevant soil data are used to guide programs of agricultural production, adjustment, and conservation and for the demonstration and extension of scientific and practical farm practices and rural utilization.

Supervision of soil classification and soil survey inspection for the United States as a whole. J. K. ABLEITER, soil scientist, in charge.

Interpretation of soil classification and mapping throughout the country as it relates to soil productivity, crop adaptability, and such. C. P. Barnes, soil scientist, in charge.

Supervision of soil classification and soil survey inspection in Northeastern and North Central States (Soil Survey Office, Northern States). Earl D. Fowler, soil scientist, regional inspector, in charge. Subheadquarters: Ames, Iowa; St. Paul, Minn.; Columbia, Mo.; Ithaca, N. Y.; Madison, Wis.

Soil-map compilation and drafting. H. W. Whitlock, cartographic engineer, in charge.

Sugar Plant Investigations.—Sugar beet investigations, including disease studies and breeding for control of Cercospora leaf spot, black root, and other diseases. G. H. Coons, principal pathologist, in charge.

Experiments on sugarcane, including growing of sugarcane in quarantine before release to various field stations of the Division or to cooperators; growing of sugarcane seedlings from imported seed; and physiological and pathological research. S. F. Sherwood, senior biochemist, in charge.

Experiments on sugar sorghum, including physiological and pathological investigations, and breeding for disease resistance. S. F. Sherwood, senior biochemist, in charge.

Tobacco, Medicinal, and Special Crops.—Tobacco production, breeding, disease, and quality investigations, including physiological and biochemical studies of the tobacco plant in laboratory, greenhouse, and field experiments; tobacco nutrition, cropping and variety tests, and breeding; tobacco genetics and breeding; also investigations in breeding and growing tobacco of high nicotine content for use in insecticides. J. E. McMurtrey, Jr., principal physiologist, in charge.

Diseases of tobacco and their control. E. E. Clayton, senior pathologist, in charge.

Tobacco quality investigations. C. W. Bacon, senior physiologist, in charge.

Experimental culture of plants yielding drugs, insecticides, essential oils, vegetable oils, and related products. A. F. Sievers, principal biochemist, in charge.

Agricultural Research Center.—About 17 miles from Washington and 2 miles east of Beltsville. Suburban trolley and bus on Washington-Baltimore Boulevard. Station about 1½ miles east of Boulevard. Telephone, TO–6430.

Agricultural Engineering.—The Divisions of Agricultural Engineering carry on research under the following four Divisions:

Farm Buildings and Rural Housing.—Headquarters for field studies of grain storage directed from Ames, Iowa; livestock-building studies at Columbia, Mo., and Davis, Calif.; potato storage studies at Fort Collins, Colo.; and building lay-out studies at Urbana, Ill.

The following studies are conducted at the Agricultural Research Center:

Investigations of environmental factors influencing development, production, and health of poultry (cooperation with Bureau of Animal Industry). J. R. McCalmont, agricultural engineer, in charge.

Structural requirements for farm buildings consistent with safety, economy, and functional requirements. E. G. Molander, senior agricultural engineer, in charge.

Investigations in planning, equipping, remodeling, and constructing farmhouses. Studies are aimed at developing efficient, economical arrangements of rooms and equipment, improved summer and winter comfort, and low construction and maintenance costs (cooperation with Bureau of Human Nutrition and Home Economics and State agricultural colleges). J. Robert Dodge, senior architect, in charge.

Preparation of farm-building plans and information on farm structures that are available to farmers through the State extension services (cooperation with Bureau of Human Nutrition and Home Economics and State agricultural colleges). J. ROBERT DODGE, senior architect, in charge.

Studies of use and efficiency of equipment for water supply, disposal of farm wastes, heating, and ventilation. J. W. ROCKEY, agricultural engineer, in charge.

Farm Electrification.—The harvesting, curing, and storing of field-cured, forced-ventilation, barn-cured, and ensiled forages; their value as feed for dairy cattle (cooperation with Bureau of Dairy Industry, Production and Marketing Administration, and the Division of Forage Crops and Diseases). Sterilization of air in poultry houses by bactericidal radiation and aerosols (cooperation with Bureau of Animal Industry). L. G. SCHOENLEBER, agricultural engineer, in charge.

Farm Power and Machinery.—Investigations to determine the most effective placement of commercial fertilizer for the various food and other crops and to determine machine design and construction for this placement for maximum stand and yield and for minimum labor requirements (cooperation with Virginia Truck Experiment Station, Western Washington Experiment Station, and State experiment stations of Louisiana, Maryland, Michigan, Minnesota, New York (Geneva), Virginia, and Washington). G. A. CUMINGS, senior agricultural engineer, in charge.

Mechanical Processing of Farm Products.—To develop standard plans and better equipment for processing plants owned cooperatively by farmers (cooperation with Farm Credit Administration). W. M. HURST, senior agricultural engineer, in charge.

Investigations in efficiency in the production of tobacco. General supervision by H. L. GARVER, senior agricultural engineer; J. W. ROCKEY, agricultural engineer, in local charge.

Forage Crops and Diseases.—Nutritional studies of grass and legume production under various cultural and management conditions; studies on nitrogen fractions of proteins (cooperation with Bureau of Animal Industry). H. L. WILKINS, associate chemist, in charge.

Glenn Dale

United States Plant Introduction Garden.—Sixteen miles from Washington, D. C. (Pennsylvania R. R. to Glenn Dale, about 2 miles north of station; by Annapolis bus on Defense Highway to Glenn Dale Sanatorium, about one-half mile south of station). Visitors will be met when arrangements are made in advance. Telephone, Bowie 3162.

Plant Exploration and Introduction.—Propagation, testing, and distribution of rare and valuable economic and ornamental plants from foreign countries and United States possessions; propagation under quarantine detention of foreign plants where required by law. F. C. BRADFORD, senior horticulturist, in charge.

Upper Marlboro

Branch Station, State Agricultural Experiment Station (cooperative investigations).—One-half mile from center of town, on county fairgrounds. Marlboro is on the Pennsylvania Railroad.

Tobacco, Medicinal, and Special Crops.—Maryland tobacco investigations, including development of improved strains and varieties of tobacco through breeding and selection; effects of preceding crops on tobacco; effects of water supply on the crop; fertilizer requirements of the Maryland tobacco crop, relation of magnesium, calcium, sulfur, and other elements to the nutrition of the tobacco plant; tobacco diseases and their control. D. E. BROWN, chief scientific aid, in charge.

MASSACHUSETTS

East Wareham

Cranberry Substation, State Agricultural Experiment Station (cooperative investigations).—Mail address, East Wareham; railroad station, Onset (New York, New Haven & Hartford R. R.). Telephone, 112–3.

Fruit and Vegetable Crops and Diseases.—Investigations of cranberry diseases, especially false blossom and fruit rots, and oxygen deficiency of bog water; cranberry breeding; testing of cranberry seedlings and selections and of blueberry selections. H. F. BERGMAN, senior pathologist, in charge.

MICHIGAN

East Lansing

State Agricultural Experiment Station (cooperative investigations).—East Lansing is about 3 miles from Lansing. Take intercity bus in Lansing marked "College," going east on Michigan Avenue to Abbot Road. College campus is about 2 blocks from there.

Farm Power and Machinery.—Investigations to develop machinery for reducing the labor and cost of producing and harvesting sugar beets (in cooperation with Colorado Agricultural Experiment Station). Directed by S. W. MCBIRNEY, Fort Collins, Colo.; local supervision by G. W. FRENCH, assistant agricultural engineer, in charge. In Agricultural Hall. Telephone 8–1511, extension 444.

Forage Crops and Diseases.—Turf investigations. C. M. HARRISON, collaborator, in charge.

Soybean investigations. L. V. NELSON, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Potato-breeding investigations. Directed from Beltsville, Md.; local supervision by E. J. WHEELER and H. C. MOORE, collaborators, in charge.

Sugar Plant Investigations.—Agronomic investigations with sugar beets. J. G. LILL, agronomist, in charge. In Agricultural Hall.

Sugar beet black root investigations. J. O. GASKILL, pathologist, in charge. In Agricultural Hall.

MINNESOTA

St. Paul

State Agricultural Experiment Station (cooperative investigations).—University Farm is about 4 or 5 miles from either Minneapolis or St. Paul. From Minneapolis, take Como-Harriet, Como-Hopkins, or Oak-Harriet streetcar to Fourth Street and Fifteenth Avenue SE.; transfer to Inter-Campus car to University Farm.

Cereal Crops and Diseases.—Agronomic and disease investigations of spring and winter wheat, including varietal comparisons, breeding and genetic studies, with special reference to disease resistance and winter hardiness. (Testing of varieties and other studies conducted at Waseca, Morris, Crookston, Grand Rapids, and Duluth branch stations.) E. R. AUSEMUS, agronomist, in charge.

Research on the distribution, pathogenicity, origin, and other characteristics of races of leaf rust of wheat in the hard red spring wheat area and of leaf rust of barley throughout the United States; studies on the relationship of environmental factors to prevalence and distribution of parasitic races; tests of cereal varieties for reaction to pure rust races as an aid in breeding for resistance; and determinations on the effect of leaf rust on the productivity and quality of cereal varieties under field conditions. M. N. LEVINE, pathologist, in charge.

Agronomic and disease investigations of flax, including varietal comparisons, breeding and genetic studies, and study of fiber qualities of seed-flax straw. (Testing of varieties and other studies also conducted at Waseca, Morris, Crookston, and Grand Rapids branch stations.) J. O. Culbertson, associate agronomist, in charge.

Tests of oil content and quality of linseed oil from flaxseed varieties grown in nursery and field trials at several Minnesota State Experiment Stations, and in uniform regional nurseries in various parts of the United States and Canada. Research on the biochemistry of the flax plant, including respiration studies on the storage quality of flaxseed. J. A. Schricker, assistant chemist, in charge.

Studies on the control of noxious weeds, including the effect of tillage, cropping, herbicides, and pasturing. Experiments at various points in Minnesota, South Dakota, and North Dakota in cooperation with State Agricultural Experiment Stations. L. M. Stahler, associate agronomist, in charge (residence Lamberton, Minn.).

Forage Crops and Diseases.—Soybean disease investigations. M. F. Kernkamp, collaborator, in charge.

Soybean breeding and cultural investigations. J. W. Lambert, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Investigations on potato culture, breeding, and diseases. F. A. Krantz, collaborator, in charge.

Fruit breeding. W. H. Alderman, collaborator, in charge.

Soil Survey.—Subheadquarters, Northern States. See Maryland, Beltsville, page 69, Soil Survey Office. I. J. Nygard, soil scientist, in charge.

Sugar Plant Investigations.—Agronomic and genetic studies on sugar beets. O. E. Reece, agent and assistant agronomist, in charge.

Pathological investigations on sugar beet black root and other diseases. H. W. Bockstahler, assistant pathologist, in charge.

MISSISSIPPI

Gulfport

United States Forest Pathology Field Laboratory (cooperation with Forest Service).—208 Kremer Building. Within walking distance of railroad station. Telephone, 2060.

Forest Pathology.—Investigations of decays and disease defects of lumber and other forest products, including sap stains. A. F. Verrall, pathologist, in charge.

Jackson

Cotton Field Office (in cooperation with State Extension Services of Mississippi Valley States).—122 Masonic Temple Building, 1130 West Capitol Street. Can be reached by bus, marked No. 2. Telephone, 2–3683.

Cotton and Other Fiber Crops and Diseases.—Regional office for cotton improvement in standardized one-variety communities in Mississippi Valley States. J. E. Hite, senior agronomist, in charge.

Meridian

United States Horticultural Field Station.—Seven miles northeast of post office, on Russell-Marion road, about 1 mile off the concrete highway. Can be reached on U. S. Routes 45 and 80. Telephone, 859–J.

Fruit and Vegetable Crops and Diseases.—Handling, transportation, and storage investigations with fruits and vegetables. J. M. Lutz, physiologist, in charge.

Sweetpotato and other vegetable investigations. M. T. Deonier, assistant olericulturist, in charge.

Grape, strawberry, and pear investigations. N. H. Loomis, assistant pomologist, in charge.

Pecan production and improvement investigations. A. C. Gossard, assistant pomologist, in charge.

United States Sugar Plant Field Laboratory.—On grounds of United States Horticultural Field Station, 7 miles northeast of Meridian Post Office, on Russell-Marion road, about 1 mile off the concrete highway. Can be reached on U. S. Routes 45 and 80. Telephone, 859–R.

Sugar Plant Investigations.—Tests of varieties of sugarcane for sirup production. I. E. Stokes, associate agronomist, in charge.

Sugar sorghum investigations. Directed by G. B. Sartoris, senior pathologist, Beltsville, Md. I. E. Stokes, associate agronomist, in charge.

Poplarville

South Mississippi Branch Experiment Station, State Agricultural Experiment Station (cooperative investigations).—On State Route 35, about 13 miles west of Poplarville, Miss., and 13 miles east of Bogalusa, La.

Fruit and Vegetable Crops and Diseases.—Tung investigations. Directed by G. F. Potter, Bogalusa, La.

Saucier

United States Forest Pathology Field Laboratory (cooperation with Forest Service).—Located at Harrison Experimental Forest of the Southern Forest Experiment Station. About 20 miles north of Gulfport, Miss. Phone station for transportation. Telephone, Gulfport 8406.

Forest Pathology.—Investigations of diseases of young natural stands and plantations, including rusts of southern pines. P. V. Siggers, associate pathologist, in charge.

State College

State Agricultural Experiment Station (cooperative investigations).—Take Gulf, Mobile & Ohio Railroad to Artesia, Miss., then transfer to bus to State College.

Cereal Crops and Diseases.—Breeding corn for the South; breeding popcorn and sweet corn for canning purposes; performance trials of corn hybrids and the development of improved methods of breeding corn (cooperation with the Bureau of Entomology and Plant Quarantine). R. C. ECKHARDT, agronomist, in charge. Telephone, 460–W.

Investigations on the control of nutgrass on agricultural lands. O. A. LEONARD, agent, in charge.

Cotton and Other Fiber Crops and Diseases.—Cotton disease investigations. J. T. PRESLEY, pathologist, in charge. Telephone, 376–W.

Cotton improvement in standardized one-variety communities. T. M. WALLER, agent, in charge.

Forage Crops and Diseases.—Grass and forage improvement and production, and pasture investigations. H. W. BENNETT, agent, in charge.

Range investigations (cooperation with Forest Service). H. W. BENNETT, agent, and H. A. JOHNSON, assistant agronomist.

Fruit and Vegetable Crops and Diseases.—Sweetpotato improvement, testing, and cultural investigations. W. S. ANDERSON, collaborator, in charge. Telephone, 417.

Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). J. L. BOWERS, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under humid conditions; cotton and corn fertilization and culture;

effect of fertilization and cover crops on soil properties and productivity. H. V. JORDAN, associate soil technologist, in charge. Telephone, 460–J.

Stoneville

Delta Branch Station, State Agricultural Experiment Station (cooperative investigations).—Near Stoneville, 1 mile from Leland (Illinois Central R. R.) and 9 miles east of Greenville (Columbus & Greenville Ry., and Illinois Central R. R.). Can be reached by automobile from either place. Telephone, 12.

Farm Power and Machinery.—Investigations to develop and improve methods and equipment for the production and harvesting of cotton. W. E. MEEK, collaborator, in charge.

Forage Crops and Diseases.—Studies include breeding, cultural, and seed-storage investigations. P. R. HENSON, agronomist, and R. B. CARR, assistant agronomist. Regional headquarters for soybean investigations in the 12 Southern States.

Soybean and forage crop diseases. H. W. JOHNSON, senior pathologist, in charge. Alfalfa investigations. R. B. CARR, assistant agronomist, in charge. Pasture investigations and grass breeding and improvement. P. G. HOGG, agent, in charge.

United States Cotton Field Station (*cooperation with State Agricultural Experiment Station*).—Adjoining the Mississippi Delta Branch Station, 1 mile from Leland and 9 miles east of Greenville. Can be reached by automobile from either place. Office at Delta Branch Station. Communicate with CHARLES R. SAYRE, superintendent, or J. B. DICK, agronomist, regarding transportation. Telephone, 12.

Cotton and Other Fiber Crops and Diseases.—Cotton breeding, culture, and improvement; cotton disease control. J. B. DICK, agronomist, in charge.

Cotton genetic and cytogenetic investigations (cooperation with State Agricultural Experiment Station).

United States Cotton Ginning Laboratory (*cooperation with Production and Marketing Administration and the State Agricultural Experiment Station*).—About 2 miles from Leland, Miss. Located across Deer Creek from the Delta Branch Substation, State Agricultural Experiment Station. Telephone, 346–J.

Mechanical Processing of Farm Products.—Cotton ginning investigations. C. A. BENNETT, senior agricultural engineer, in charge.

Lint flue cleaning (Bankhead-Jones Project). C. A. BENNETT, senior agricultural engineer, in charge.

MISSOURI

Columbia

State Agricultural Experiment Station (*cooperative investigations*).—Within walking distance of the railroad station (Wabash R. R. and M. K. & T. R. R.).

Cereal Crops and Diseases.—The development of improved methods of breeding wheat, oats, and corn. L. J. STADLER, agent in charge. Located in 202 Genetics Building. Telephone, 3392.

Farm Buildings and Rural Housing.—Investigations of the effect of environmental factors on the growth, health, and production of farm animals (cooperation with Bureau of Dairy Industry and Bureau of Animal Industry). Directed from Beltsville, Md., by J. R. MCCALMONT, agricultural engineer; local supervision by H. J. THOMPSON, agricultural engineer, in charge. Telephone, 3694.

Forage Crops and Diseases.—Grass culture and production investigations. E. M. BROWN, agronomist, in charge. In Department of Field Crops. Telephone, 7421.

Investigations on breeding and culture of soybeans in relation to their adaptation to industrial utilization. C. V. FEASTER, agent, in charge. In Department of Field Crops. Telephone, 7421.

Soybean diseases. C. M. TUCKEY, collaborator, in charge.

Miscellaneous legume culture and production investigations. J. D. BALDRIDGE, agent, in charge. Telephone, 7421.

Soil Survey.—Subheadquarters, Northern States. See Maryland, Beltsville, page 69, Soil Survey Office, 135 Mumford Hall. W. D. SHRADER, soil scientist, in charge. Telephone, 7314.

United States Forest Pathology Field Laboratory (cooperation with University of Missouri and U. S. Bureau of Entomology and Plant Quarantine).—Located at Lefevre Hall, Department of Botany, University of Missouri. Telephone, 7332.

Forest Pathology.—Investigations of phloem necrosis of elm and its control. T. W. BRETZ, pathologist, in charge.

Elsberry

Elsberry Rice Experiment Field (cooperation with State Agricultural Experiment Station).—About 4 miles north and one-half mile east of Elsberry. Transportation arrangements should be made with B. M. KING, in Columbia. Telephone, 7421.

Cereal Crops and Diseases.—Varietal experiments with rice, corn, oats, wheat, winter barley, and soybeans; rotation and fertilizer studies with these crops. B. M. KING, agent, in charge.

MONTANA

Bozeman

State Agricultural Experiment Station (cooperative investigations).—About 2 miles from railroad station. Can be reached by bus. Telephone, 147.

Cereal Crops and Diseases.—Breeding and genetic studies of wheat for quality, disease and insect resistance, hardiness, and yield. Studies on physiologic races of bunt. R. H. Bamberg, pathologist, in charge. Coordinator for the research on wheat (cooperative with agricultural experiment stations in eight Western States).

Classification of flax varieties and breeding flax for yield and disease resistance; breeding oats for yield, quality, and smut resistance; breeding barley for yield, disease resistance, and malting quality. Directed from Beltsville, Md.; local supervision by A. H. Post, agronomist, State Agricultural Experiment Station.

Forage Crops and Diseases.—Pasture and range investigations. R. E. Stitt, associate agronomist, in charge. In Department of Agronomy.

Havre

North Montana Branch Station, State Agricultural Experiment Station (cooperative investigations).—About 8 miles southwest of Havre (Great Northern Ry.). Can be reached by automobile, or transportation arrangements can be made by communicating with M. A. Bell, collaborator and superintendent. Telephone, 915–W.

Soils, Fertilizers, and Irrigation.—Soils management and crop production under dry-land conditions. M. A. Bell, collaborator and superintendent.

Huntley

Huntley Field Station (cooperative investigations under State supervision).—Four miles east of railroad station (Northern Pacific R. R. and Chicago, Burlington & Quincy R. R.). For transportation arrangements telephone the field station through the Worden, Mont., exchange.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; livestock investigations and pasturing experiments (cooperation with Bureau of Dairy Industry); investigations in the fluctuation of subsoil water; varietal tests. DANIEL HANSEN, agronomist and superintendent, in charge.

Soil management and crop production under dry-land conditions; regrassing studies. A. E. SEAMANS, associate agronomist, in charge.

Tobacco, Medicinal, and Special Crops.—Field tests with special Russian safflower as an oilseed crop; testing. Directed from Beltsville, Md.; local supervision by DANIEL HANSEN, associate agronomist and superintendent, in charge.

Moccasin

Judith Basin Branch Station, State Agricultural Experiment Station (cooperative investigations).—About 1½ miles west of Moccasin (Great Northern Ry.), on U. S. Route 87. Can be reached by Greyhound bus, or transportation arrangements can be made by communicating with R. M. WILLIAMS, superintendent. Telephone, 14–F–30.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; grazing and winter feeding experiments with beef cattle. R. M. WILLIAMS, agronomist and superintendent, in charge.

NEBRASKA

Lincoln

State Agricultural Experiment Station (cooperative investigations).—University Farm is about 3 miles northeast of the center of the city. Can be reached by busses marked "Agricultural College," "University Place," and "Havelock" from Thirteenth and O Streets. Telephone, B–6891.

Cereal Crops and Diseases.—Agronomic and disease investigations of wheat, oats, and barley, including varietal comparisons, breeding, and genetic studies, including studies on winter hardiness of wheat and disease resistance of wheat, oats, and barley. (Testing of small-grain varieties also conducted at North Platte, Alliance, and Scotts Bluff substations.) L. P. Reitz, senior agronomist, in charge.

Agronomic and disease investigations of grain sorghums and barley. O. J. Webster, associate agronomist, in charge.

Forage Crops and Diseases.—Alfalfa culture, production, breeding, and improvement investigations.

Sweetclover culture, production, breeding, and improvement.

Grass breeding, improvement, and pasture investigations. L. C. Newell, agronomist, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land and irrigated conditions. H. F. Rhoades, associate agronomist, in charge. Telephone, 2–7261, extension 252.

Soil Survey Office, Great Plains States.—Located at Nebraska Hall, University of Nebraska, City Campus, fourth building on west side of Twelfth Street, north of intersection of Twelfth and R Streets. Entrance south side of building. Telephone 2–7181, extension 152.

Soil Survey.—Soil types are identified, defined, and classified on the basis of their characteristics, and county soil maps are prepared showing their distribution. Soil survey reports are written, describing the soil types in terms of both their morphology and their crop adaptability and production under farm practices. This work is carried on cooperatively with the State agricultural experiment stations of the region and in many counties with the Soil Conservation Service or other interested Federal agencies. Soil maps and relevant soil data are used to guide regional programs of agricultural production, adjustment, and conservation, and for the demonstration and extension of scientific and practical farm practices and rural-land utilization. The work of the inspectors, assistant inspectors, and other soil scientists is under the supervision of JAMES THORP, soil scientist, regional inspector in charge. *Subheadquarters:* College Station, Tex.

Mitchell

Scotts Bluff Field Station (cooperative investigations under State supervision).—Five miles east of Chicago, Burlington & Quincy Railroad station. Visitors will be met by automobile from field station by making arrangements with LIONEL HARRIS, superintendent, in charge. Telephone, 4522.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation (cooperation with State Agricultural Experiment Station); irrigated rotations and tillage experiments; varietal tests of alfalfa and other field crops; fertilization of potatoes and sugar beets; livestock investigations. LIONEL HARRIS, associate agronomist and superintendent, in charge.

North Platte

North Platte Substation, State Agricultural Experiment Station (cooperative investigations).—About 3 miles south of Union Pacific Railroad station. Can be reached by automobile, or transportation arrangements can be made by communicating with J. C. ADAMS, superintendent, in charge. Telephone, 499.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions. L. L. ZOOK, associate agronomist, in charge.

Scottsbluff

United States Sugar Plant Field Office.—In post office building at Scottsbluff (Chicago, Burlington & Quincy R. R. or Union Pacific

R. R. to Gehring, about 4 miles from Scottsbluff). Telephone, Grey 231.

Sugar Plant Investigations.—Agronomic investigations with sugar beets. Field experiments are conducted in vicinity of Scottsbluff, Nebr., and Torrington, Wyo. S. B. Nuckols, agronomist, in charge.

NEVADA

Fallon

United States Newlands Field Station.—One mile south of Southern Pacific Railroad station. Visitors will be met at Fallon by automobile from field station. Telephone, 146–R.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; varietal tests of grain and other field and horticultural crops; studies on position and quantity of subsoil waters; experiments on the reclamation of saline and impermeable soils; livestock investigations (cooperation with the State Agricultural Experiment Station). F. M. Willhite, agronomist and superintendent, in charge.

Reno

State Agricultural Experiment Station, University of Nevada (cooperative investigations).—About 1 mile northeast of railroad station (Union Pacific R. R.).

Forage Crops and Diseases.—Alfalfa breeding, improvement, and disease investigations. O. F. Smith, associate pathologist, in charge.

NEW JERSEY

Pemberton

Cranberry Station, State Agricultural Experiment Station (cooperative investigations).—On Brown Mills Road about 1 mile from Pemberton (branch lines of the Pennsylvania R. R., or bus). Telephone, 113.

Fruit and Vegetable Crops and Diseases.—Investigation of diseases of cranberries and blueberries. (Field work conducted at various points in New Jersey.) R. B. Wilcox, associate pathologist, in charge.

Breeding of blueberries. Directed from Beltsville, Md.

NEW MEXICO

Albuquerque

United States Forest Pathology Field Laboratory (cooperation with U. S. Forest Service, National Park Service, and Arizona Agricultural Experiment Station).—310 Post Office Building. Within walking distance of railroad and bus stations. Telephone, 2–4562.

Forest Pathology.—Investigations of diseases that affect timber stands, reduce lumber production, and influence logging operations; and diseases of young natural stands and plantations; and diseases of trees and giant cactus in national parks and monuments. L. S. Gill, senior pathologist, in charge.

Soil Survey.—Subheadquarters, Far Western States, 915 East Central Street. Telephone, 4583, extension 15. See California, Berkeley: Soil Survey Office, page 26. W. G. Harper, soil scientist, in charge.

State College

State Agricultural Experiment Station (cooperative investigations).—One-half mile from Atchison, Topeka & Santa Fe Railway station at Mesilla Park (3 miles from Las Cruces, N. Mex.). Visitors will be met by automobile. Telephone, Las Cruces, 254.

Sugar Plant Investigations.—Sugar beet breeding and variety testing; experiments on sugar beet seed production. J. C. OVERPECK, agent, in charge.

Tobacco, Medicinal, and Special Crops.—Investigations on tannin plants. A. R. LEDING, associate agronomist, in charge.

United States Cotton Field Station.—On mesa near buildings of the New Mexico College of Agriculture and Mechanic Arts, 1 mile from the Atchison, Topeka & Santa Fe Railway station at Mesilla Park and 3 miles from Las Cruces. Transportation arrangements should be made in advance with A. R. LEDING, superintendent. Telephone, Las Cruces 686 R–3.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton breeding and improvement, genetics, and promotion of farm use of improved seed stocks. A. R. LEDING, associate agronomist and superintendent, in charge.

Tucumcari

United States Tucumcari Field Station.—About 2 miles northeast of Tucumcari (Chicago, Rock Island & Pacific Ry. and Southern Pacific R. R.) on U. S. Route 54. Can be reached by automobile, or transportation arrangements can be made by communicating with D. R. BURNHAM, superintendent. Telephone, 261.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; regrassing studies; and varietal tests. D. R. BURNHAM, associate agronomist and superintendent, in charge.

NEW YORK

Babylon

United States Floricultural Field Laboratory.—In Entomology Laboratory, 1½ miles from post office in Babylon (Long Island R. R.

from New York City), on Deer Park Avenue. Can be reached by automobile from station, or transportation can be arranged by communicating with the laboratory. Telephone, 307.

Fruit and Vegetable Crops and Diseases.—Investigations on culture and disease control of flower bulbs and other floricultural crops. Directed from Beltsville, Md.; local supervision by F. A. Haasis, collaborator, in charge.

Geneva

State Agricultural Experiment Station (cooperative investigations).—At northern limit of city, about 1 mile from the railroad station. Telephone, 2919.

Fruit and Vegetable Crops and Diseases.—Breeding of tree fruits. Richard Wellington, collaborator, in charge.

Hicksville

Nematology Field Laboratory (cooperative investigations).—On South Broadway, R. F. D. 1. Telephone, 1730.

Nematology.—Greenhouse, field, and laboratory investigations on life history and control of the golden nematode of potatoes and on other regional plant nematode problems, with special emphasis on soil fumigation. In cooperation with Bureau of Entomology and Plant Quarantine, New York State Department of Agriculture and Markets, and the Agricultural Experiment Station at Cornell University. B. G. Chitwood, associate nematologist, in charge.

Ithaca

Agricultural Experiment Station, Cornell University (cooperative investigations).—About 1½ miles east of Delaware, Lackawanna & Western and Lehigh Valley Railroad stations and 1 mile west of New York Central

Railroad station. Take bus to campus and walk one-fourth mile to Agricultural College.

Cereal Crops and Diseases.—Varietal comparisons of wheat, oats, and barley; extensive breeding and studies of inheritance in wheat and oats. N. F. JENSEN, agent, in charge.

Investigations of cytology and embryogeny of corn. L. F. RANDOLPH, senior cytologist, in charge.

Forage Crops and Diseases.—Alfalfa breeding and seed production studies. S. S. ATWOOD, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Potato breeding investigations. Directed from Beltsville, Md.; local supervision by J. R. LIVERMORE, DONALD REDDICK, and E. V. HARDENBURG, collaborators, in charge.

Investigations on resistance to diseases and insects in the onion. Directed from Beltsville, Md.; local supervision by A. G. NEWHALL, collaborator, in charge.

Soil Survey.—Subheadquarters, Northern States. See Maryland, Beltsville, page 69, Soil Survey Office. M. G. CLINE, agent and soil scientist, in charge. Telephone 3331, extension 2728.

New York City

United States Market Pathology Laboratory (cooperation with Production and Marketing Administration).—1022 Government Warehouse, 641 Washington Street. Telephone, Canal 6–2100, extension 294.

Fruit and Vegetable Crops and Diseases.—Investigations in the handling, transportation, and storage of fruits and vegetables, with particular reference to diseases that cause spoilage during transit and on the market. C. O. BRATLEY, senior pathologist, in charge.

Syracuse

New York State College of Forestry (cooperation with New York State College of Forestry, U. S. Bureau of Entomology and Plant Quarantine, and U. S. Forest Service).—Can be reached by streetcar from railroad and bus stations. Telephone, 2–2163.

Forest Pathology.—Investigations of white pine blister rust. R. R. HIRT, agent, in charge.

NORTH CAROLINA

Asheville

United States Forest Pathology Field Laboratory (cooperation with Forest Service and Bureau of Entomology and Plant Quarantine).—Located at Southeastern Forest Experiment Station, 223 Federal Building. Telephone, 3131. Can be reached from railroad and bus stations.

Forest Pathology.—Investigations of diseases that affect timber stands, including heart rots, root rots, cankers, and little leaf disease of pine; and diseases of street and shade trees, including mimosa wilt. G. H. HEPTING, senior pathologist, in charge.

Oxford

Tobacco Branch Station, State Department of Agriculture, and State Agricultural Experiment Station (cooperative investigations).—One mile southwest of Oxford (Seaboard Air Line Ry. and Southern Ry.). Telephone, 537.

Farm Electrification.—Investigations of engineering problems related to tobacco production, processing, and preparation for market, particularly improvement in methods of curing, ordering, grading, and tying. O. A. BROWN, senior agricultural engineer, in charge.

Tobacco, Medicinal, and Special Crops.—Flue-cured and aromatic tobacco investigations, including cropping tests with tobacco; fertilizer requirements of tobacco, especially nutrient elements not ordinarily considered in fertilizer practice; tobacco breeding improvements in tobacco curing; investigations on diseases of tobacco and their control. E. G. Moss, senior agronomist, in charge.

Raleigh

State Agricultural Experiment Station (cooperative investigations).—Two miles west of Raleigh. Can be reached by bus. Telephone, 6421.

Cereal Crops and Diseases.—Corn improvement investigations, dealing chiefly with breeding problems in connection with the development of hybrid strains suitable for all sections of North Carolina. Work in cultural and fertilizer practices is in cooperation with Division of Soils, Fertilizers, and Irrigation. P. H. HARVEY, agronomist, in charge.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton quality and physiology. THOMAS KERR, cytologist, in charge.

Investigations in cotton breeding, genetics, and improvement. P. H. KIME, associate agronomist, in charge.

Cotton improvement in standardized one-variety communities (cooperation with Agricultural Extension Service of the North Carolina College of Agriculture). J. A. SHANKLIN, agronomist, in charge.

Forage Crops and Diseases.—General pasture and forage investigations. R. L. LOVVORN, agent, in charge.

Miscellaneous legume breeding and improvement investigations. C. H. HANSON, assistant agronomist, in charge.

Investigations of breeding and culture of soybeans in relation to their adaptation to industrial utilization. E. E. Hartwig, associate agronomist, in charge.

Soybean diseases. S. G. Lehman, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding and production investigations on muscadine grapes and bramble berries. C. F. Williams, horticulturist, in charge.

Blueberry and strawberry breeding and production investigations. E. B. Morrow, of the State Agricultural Experiment Station, in charge.

Soil fertility and plant nutrition investigations with grapes and berries. W. L. Lott, soil scientist, in charge.

Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). F. D. Cochran, in charge.

Potato breeding investigations. Directed from Beltsville, Md.; local supervision by M. E. Gardner, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under humid conditions; studies of fertilization, fertilizer placement, cover crops, and stand density on corn yields; effect of fertilization and soil management and cover crops on soil properties and productivity. B. A. Krantz, soil scientist, in charge.

Soil Survey.—Subheadquarters, Southern States. See Tennessee, Knoxville: Soil Survey Office, page 112. W. D. Lee, agent and soil scientist, in charge. Telephone, 6421, extension 329.

Tobacco, Medicinal, and Special Crops.—Tobacco disease investigations, with special reference to root knot and other disease problems of eastern North Carolina. (Field experiments conducted at Angier, 9 miles south of Raleigh.) Directed from Beltsville, Md.; local supervision by station officials. W. E. Colwell, agent, in charge.

Rocky Mount

Upper Coastal Plain Branch Station, State Department of Agriculture, and State Agricultural Experiment Station (cooperative investigations).—Seven and one-half miles east of Rocky Mount (Atlantic Coast Line R. R.), on the Cokey Road. R. E. CURRIN, assistant director, can be reached by telephone, Edgecombe Test Farm, No. 5202.

Tobacco, Medicinal, and Special Crops.—Tobacco variety tests; fertilizer and crop-rotation experiments with tobacco, and studies on disease control. W. E. COLWELL, agent, in charge.

Statesville

United States Cotton Field Station (*cooperative investigations*).—Adjoining the Piedmont Branch Station, 1½ miles northwest of Statesville (Southern Ry.). Communicate with J. W. HENDRICKS, superintendent, regarding transportation. Telephone, 742.

Cotton and Other Fiber Crops and Diseases.—Cotton breeding and improvement investigations. J. W. HENDRICKS, agent, in charge.

Transou

Upper Mountain Experiment Station (cooperative investigations).—About 10 miles southeast of Jefferson. Can be reached by Norfolk & Western Railway to West Jefferson. Transportation from West Jefferson should be arranged in advance by correspondence.

Tobacco, Medicinal, and Special Crops.—Burley and aromatic tobacco investigations, including fertilizer requirements of tobacco, tobacco variety tests, and growing of high-nicotine tobacco (cooperation with North Carolina Department of Agriculture and State Agricultural Experiment Station). Supervised by LUTHER SHAW from Waynesville, N. C.; local supervision by J. A. GRAHAM, agent, in charge.

Waynesville

Mountain Experiment Station (cooperative investigations).—About 1 mile east of Waynesville. Can be reached by Southern Railway by way of Asheville. Telephone, 342–W.

Tobacco, Medicinal, and Special Crops.—Burley and aromatic tobacco investigations, including fertilizer requirements, methods of curing, handling, and disease control with reference to the development and testing of improved disease-resistant strains of burley tobacco. Investigations in breeding and growing tobacco of high-nicotine content for use in insecticides (cooperation with North Carolina Department of Agriculture and State Agricultural Experiment Station). LUTHER SHAW, agronomist, in charge.

Willard

Coastal Plain Branch Station, State Department of Agriculture, and State Agricultural Experiment Station (cooperative investigations).—One and one-half miles north of Atlantic Coast Line Railroad station. Telephone, 2891, through Wallace exchange.

Fruit and Vegetable Crops and Diseases.—Muscadine breeding and production investigations. Directed by C. F. WILLIAMS, agent, State Agricultural Experiment Station, Raleigh, N. C.; local supervision by C. T. DEARING, agent, in charge.

Strawberry breeding and production investigations. Directed by E. B. MORROW, State Agricultural Experiment Station, Raleigh, N. C.; local supervision by C. T. DEARING, agent, in charge.

NORTH DAKOTA

Dickinson

Dickinson Substation, State Agricultural Experiment Station (cooperative investigations).—About 1 mile northwest of Dickinson

(Northern Pacific Ry.) on U. S. Route 10. Transportation arrangements can be made by telephoning the superintendent. Telephone, 295–J.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions. LEROY MOOMAW, associate agronomist, superintendent, in charge.

Fargo

State Agricultural Experiment Station (cooperative investigations).—About 1½ miles northwest of city. Take bus marked "Agricultural College." Telephone, 6411.

Cereal Crops and Diseases.—Investigations on the diseases of flax, including rust, wilt, two kinds of canker, browning, and pasmo disease. H. H. FLOR, pathologist, in charge.

Wheat improvement investigations, durum wheat in particular, principally breeding and testing for disease resistance, improved quality, shorter and stronger straw, and earlier maturity. G. S. SMITH, agronomist, in charge.

Forage Crops and Diseases.—Soybean investigations. T. E. STOA, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Potato breeding investigations. Directed from Beltsville, Md.; local supervision by HAROLD MATTSON, collaborator, in charge.

Langdon

Langdon Substation, State Agricultural Experiment Station (cooperative investigations).—About 1 mile east of Langdon (Great Northern Ry.). Communicate with VICTOR STURLAUGSON, superintendent, regarding transportation arrangements. Telephone, 19–F–1.

Cereal Crops and Diseases.—Investigations in the improvement of wheat, dealing principally with production and testing varieties for improved disease resistance, field characters, and quality. G. S. SMITH, agronomist, in charge.

Mandan

United States Northern Great Plains Field Station.—About 1 mile southwest of Mandan (Northern Pacific Ry.). Transportation arrangements can be made by communicating with E. J. GEORGE, superintendent. Telephone, 348.

Forage Crops and Diseases.—Grass breeding, forage production, and range investigations (cooperation with State Agricultural Experiment Station and Soil Conservation Service). G. A. ROGLER, agronomist, in charge.

Fruit and Vegetable Crops and Diseases.—Testing, breeding, and cultural investigations with fruits, vegetables, and ornamentals for the northern Great Plains. W. P. BAIRD, associate horticulturist, in charge.

Farm windbreak investigations and cooperative tests in the northern Great Plains. E. J. GEORGE, senior silviculturist, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; varietal tests; corn-hybrid tests and grain sorghum project (cooperation with State Agricultural Experiment Station); soil moisture investigations; and root studies. E. J. GEORGE, senior silviculturist and superintendent, in charge.

OHIO

Columbus

State College of Agriculture (cooperative investigations).—About 3 miles from railroad station at Columbus. Can be reached by streetcar or bus.

Forage Crops and Diseases.—Alfalfa cultural and improvement investigations. C. J. WILLARD, collaborator, in charge.

Alfalfa breeding and improvement investigations. J. G. DEAN, JR., agent, in charge.

Legume seed production studies.

Investigations of breeding and culture of soybeans in relation to their adaptation to industrial utilization. L. C. SABOE, assistant agronomist, in charge.

Soybean disease investigations. C. C. ALLISON, collaborator, in charge.

United States Forest Pathology Field Laboratory (cooperation with State Agricultural Experiment Station, Oklahoma A. and M. College, and U. S. Bureau of Entomology and Plant Quarantine).—Ten miles southeast of Columbus, at Rohr and Bixby Roads. Phone laboratory for transportation. Telephone, FR. 7–5690.

Forest Pathology.—Investigations of control measures for phloem necrosis of elm and certain forest-tree diseases. R. U. SWINGLE, pathologist, in charge.

Toledo

Pest and Plant Disease Control Machinery Laboratory.—3620 River Road. Can be reached by bus marked "Maumee" of the Maumee Valley Transportation Company. Telephone, Walbridge 5182.

Farm Power and Machinery.—Investigations to improve the effectiveness of present equipment and methods and to develop new equipment or devices for efficiently controlling the economically important insect pests and plant diseases (cooperation with State Agricultural Experiment Station and U. S. Bureau of Entomology and Plant Quarantine). FRANK IRONS, senior agricultural engineer, in charge.

Wooster

State Agricultural Experiment Station (cooperative investigations).—About 1 mile south of

Wooster (Baltimore & Ohio R. R. and Pennsylvania R. R.). Telephone, 39.

Cereal Crops and Diseases.—Effect of weather and nutrition on the growth development and quality of corn, including mineral nutrition of corn; seed storage; seed conditioning; radioactive isotopes; and spectrographic analysis of plant tissues. J. D. Sayre, physiologist, in charge.

Corn production; breeding, disease, and quality investigations; breeding corn for the Corn Belt; performance trials of corn hybrids; development of improved methods of breeding corn; and the effect of date and method of planting corn and of fertilizers on corn quality and yield. G. H. Stringfield, senior agronomist, in charge.

Quality evaluation of wheat varieties produced in the breeding programs of the North Central and Southeastern States, including: The relation of bromate level and mixing time of bread doughs to the evaluation of new wheat varieties; development of simple methods for evaluating small samples of different varieties and classes of wheat; development of baking techniques for evaluating the quality of different varieties and classes of wheat; the effect of environment on the inorganic elements of wheat varieties and their relation to milling procedures and nutritive values; determination of the inorganic composition of the different parts of the wheat kernel; and the determination of the effects of adding soybean flour to wheat flour to be used for bread. Located in Federal Soft Wheat Laboratory. V. H. Morris, senior chemist, in charge.

Forage Crops and Diseases.—Studies on life-history, improvement, and seed production of grasses. M. W. Evans, associate agronomist, in charge.

OKLAHOMA

Lawton

United States Lawton Field Station.—About one and one-half miles north of Lawton (Chicago, Rock Island & Pacific Ry. and St. Louis-San

Francisco Ry.). Station can be reached by Lawton-Fort Sill bus, or transportation arrangements can be made by communicating with W. M. OSBORN, superintendent. Telephone, 21–W.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; varietal and spacing tests with cotton; varietal tests of wheat, oats, barley, and sorghum. W. M. OSBORN, associate agronomist and superintendent, in charge.

Stillwater

State Agricultural Experiment Station (cooperative investigations).—About three-fourths mile from bus station and 1 mile from railroad station (Atchison, Topeka & Santa Fe Ry.).

Cereal Crops and Diseases.—Breeding sorghum for improved adaptation, including the resistance to disease and insect damage. J. B. SIEGLINGER, senior agronomist, in charge.

Breeding barley, oats, and wheat for improved adaptation and quality, including resistance to disease and insect damage. A. M. SCHLEHUBER, agronomist, in charge. Telephone, A. and M. College 100.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton breeding, genetics, and improvement. H. E. DUNLAVY, agent, in charge.

Cotton improvement in standardized one-variety communities. R. W. ELLITHORP, agent, in charge. Telephone, Perkins 906–F–21.

Forage Crops and Diseases.—Soybean investigations. H. W. STATEN, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). H. B. CORDNER, collaborator, in charge.

Tipton

Cotton Substation, State Agricultural Experiment Station (cooperative investigations).—Three miles south of Tipton and 14 miles northwest of Frederick on Frederick-Altus Highway. Telephone, 91.

Cotton and Other Fiber Crops and Diseases.—Cotton breeding and improvement investigations. Directed from Stillwater, Okla.; local supervision by I. M. PARROTT, agent, in charge.

Woodward

United States Southern Great Plains Field Station.—About 1 mile southwest of Woodward (Atchison, Topeka & Santa Fe Ry. and Missouri, Kansas & Texas Ry.). Transportation arrangements can be made by communicating with L. F. LOCKE, acting superintendent. Telephone, 99.

Cereal Crops and Diseases.—Breeding sorghum for improved adaptation, including disease resistance and insect damage (cooperation with State Agricultural Experiment Station). Directed from Stillwater by J. B. SIEGLINGER.

Forage Crops and Diseases.—Studies of methods of establishing and maintaining stands of native and introduced grasses; the development of new, improved grass strains through plant breeding methods; studies of the nutritive value of the range forage at various stages of growth; studies of sagebrush control through mowing and its relation to increased animal gains; studies of deferred and rotational systems of grazing in comparison with continuous grazing; and studies of the effect of intensity of grazing on the productivity of the pastures (cooperation with State Agricultural Experiment Station, U. S. Bureau of Animal Industry, and U. S. Soil Conservation Service). D. A. SAVAGE, senior agronomist, in charge.

Fruit and Vegetable Crops and Diseases.—Testing, breeding, and cultural investigations with fruits, vegetables, and ornamentals for the southern Great Plains. L. F. LOCKE, horticulturist, in charge.

Farm windbreak investigations and cooperative tests of the adaptability of trees and shrubs in the southern Great Plains. E. W. JOHNSON, associate silviculturist, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; grass rotations, fertilizer tests. L. F. LOCKE, horticulturist, in charge.

OREGON

Corvallis

State Agricultural Experiment Station (cooperative investigations).—About 1 mile from center of town. Can be reached by bus. Telephone, College 90.

Cotton and Other Fiber Crops and Diseases.—Experiments with fiber flax and other bast fiber plants; breeding, cultural, and disease-resistance tests; soil-type and fertilizer tests in fields of flax growers; retting experiments, and spinning tests in spinning mill at Salem. E. G. NELSON, associate agronomist, in charge. Telephone, 620, extension 116.

Forage Crops and Diseases.—Agronomic investigations with forage crops, including vetches, clovers, grasses, alfalfa, and miscellaneous legumes. H. A. SCHOTH, senior agronomist, in charge. In Agriculture Building. Telephone, 620, extension 116.

Studies on breeding and production of forage crops. H. A. SCHOTH, senior agronomist, in charge. In Agriculture Building. Telephone,620, extension 116.

Disease investigations of forage crops. J. R. HARDISON, associate pathologist, in charge. In

Agriculture Building. Telephone, 620, extension 97.

Fruit and Vegetable Crops and Diseases.—Walnut and filbert production investigations. C. E. SCHUSTER, horticulturist, in charge. Telephone, College 94.

Walnut and filbert disease control investigations. P. W. MILLER, pathologist, in charge. Telephone, College 94.

Small-fruit breeding and production investigations. G. F. WALDO, associate pomologist, in charge. Telephone, College 94.

Investigations of diseases of ornamentals, especially narcissus, iris, lilies, and tulips. F. P. MCWHORTER, agent, in charge. Telephone, College 97.

Investigations on bean and table beet breeding for resistance to curly top and on nature of resistance. B. F. DANA, pathologist, in charge.

Mechanical Processing of Farm Products.—Fiber flax processing machinery investigations. In Agricultural Engineering Building. J. E. HARMOND, senior agricultural engineer, in charge.

Rubber Plant Investigations.—Genetical studies with kok-saghyz. R. W. HENDERSON, agent, in charge.

Sugar Plant Investigations.—Sugar beet seed production, including soil fertility studies. R. A. PENDLETON, associate soil technologist, in charge.

Tobacco, Medicinal, and Special Crops.—Investigation of the distribution and control of downy mildew and other diseases of hops; investigation of the quality of hops as affected by various factors. G. R. HOERNER, agent, in charge.

Hermiston

United States Umatilla Field Station.—One and one-half miles south of Hermiston (Union Pacific R. R.). Transportation arrangements can be made by communicating with

C. A. LARSON, superintendent. Telephone, 3372.

Fruit and Vegetable Crops and Diseases.—Curly top-resistance field plots. Directed by B. F. DANA, Corvallis; local supervision by C. A LARSON, superintendent, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; irrigated rotations and tillage experiments; land-reclamation studies; variety tests of alfalfa and other crops; tests of pasture grasses and irrigation methods (cooperation with Divisions of Agricultural Engineering); experiments in turkey feeding and dairying (cooperation with State Agricultural Experiment Station). C. A. LARSON, soil scientist and superintendent, in charge.

Hood River

United States Fruit Disease Field Laboratory.—22 and 23 Pythian Building, about 2 blocks from Union Pacific Railroad station. Telephone, 1303.

Fruit and Vegetable Crops and Diseases.—Investigations of diseases of apples, pears, and stone fruits and testing new fungicides. J. R. KIENHOLZ, associate pathologist, in charge.

Klamath Falls

Klamath Experimental Area (cooperative investigations).—About 2 miles from Klamath Falls and can be reached by taxi.

Rubber Plant Investigations.—Field and genetical studies on kok-saghyz (cooperation with State Agricultural Experiment Station). A. E. GROSS, superintendent, in charge.

Medford

Medford Pear Investigation Laboratory (cooperation with State Agricultural Experiment Station).—About 1½ miles south of city limits.

Visitors will be met by automobile if advance arrangements are made. Telephone, 3270.

Fruit and Vegetable Crops and Diseases.—Pear irrigation, nutrition, and breeding investigations. E. S. Degman, associate pomologist, in charge.

Moro

Sherman Branch Experiment Station, State Agricultural Experiment Station (*cooperative investigations*).—Most convenient way to reach Moro (Union Pacific R. R.) from the main line is by Trailway bus from The Dalles. Transportation can be arranged by telephoning M. M. Oveson, superintendent. Telephone, 282.

Cereal Crops and Diseases.—Extensive agronomic investigations of dry-land cereals, chiefly wheat, oats, and barley, and of methods of cereal improvement and production, including varietal comparisons, genetics and breeding, rates, dates, and methods of seeding, tillage, seedbed preparation, fallowing methods, and rotation effects. M. M. Oveson, superintendent and assistant agronomist, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; crop-residue studies (cooperation with Soil Conservation Service). M. M. Oveson, superintendent and assistant agronomist, in charge.

Pendleton

Pendleton Branch Experiment Station, State Agricultural Experiment Station (*cooperative investigations*).—Ten miles northeast of Pendleton (Union Pacific R. R.). Pendleton-Walla Walla highway (State Route 11) passes within 1 mile of station. Arrangements for transportation can be made by calling G. A. Mitchell, superintendent. Telephone, 39–F–4.

Cereal Crops and Diseases.—Agronomic and disease investigations with cereals (wheat, oats, and barley). F. H. McNeal, agent, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; fertilizer experiments; pea variety tests; bindweed control; crop-residue studies (cooperation with Soil Conservation Service). G. A. Mitchell, associate agronomist and superintendent, in charge.

Portland

United States Forest Pathology Field Laboratory (cooperation with Forest Service).—630 Post Office Building, Northwest Broadway and Glisan Streets, 3 blocks from railroad station. Telephone, Atwater 6171.

Forest Pathology.—Investigations of diseases that affect timber stands, reduce lumber production, and influence logging operations; and decays and disease defects of lumber and other forest products. J. L. Bedwell, pathologist, in charge.

PENNSYLVANIA

Lancaster

Tobacco Experiment Station (cooperation with State Agricultural Experiment Station).—Northeast of Lancaster, on Oregon Pike, 1 mile from Pennsylvania Railroad station. No transportation available except by bus from Lancaster to Reading, which goes within one-fourth mile of experimental field. Telephone, 2–1933.

Tobacco, Medicinal, and Special Crops.—Tobacco seedbed and fertilizer experiments, tobacco breeding experiments, and crop rotation experiments with tobacco as the principal crop; investigations in breeding and growing tobacco of high nicotine content for use as insecticides. O. E. Street, agronomist, in charge.

State College

United States Regional Pasture Research Laboratory.—Thirty miles from Lewistown. Busses connect with the trains.

Forage Crops and Diseases.—Research on important pasture grasses and legumes in the Northeastern States, involving cytogenetics and breeding; physiology and chemical composition; pathology and establishment and management of pastures and meadows (cooperation with the 12 Northeastern States). R. J. Garber, principal agronomist, in charge. Telephone, 2003.

PUERTO RICO

Mayaguez

Puerto Rico Agricultural Experiment Station (cooperative investigations).—About 2 miles from Mayaguez and can be reached by taxi.

Rubber Plant Investigations.—Maintenance of hevea rubber breeding garden for natural crossing of high-yielding and disease-resistant clones. Directed by A. W. Bechtel, Marfranc, Haiti; local supervision by K. A. Bartlett, director, in charge.

RHODE ISLAND

Kingston

State Agricultural Experiment Station (cooperative investigations).—About 3 miles north of New York, New Haven & Hartford Railroad station. Can be reached by automobile.

Fruit and Vegetable Crops and Diseases.—Potato breeding investigations. Directed from Beltsville, Md.; local supervision by A. E. Rich, collaborator, in charge.

SOUTH CAROLINA

Blackville

Edisto Experiment Station (cooperative investigations).—About 3 miles west of Blackville (on Southern Ry.). Can be reached by Southeastern stage bus, which passes directly in front of grounds. Telephone, 2791.

Fruit and Vegetable Crops and Diseases.—Sweetpotato breeding, selection, variety testing, and cultural investigations. M. B. HUGHES, collaborator, in charge.

Peanut nutrition, spacing, disease control, and variety and strain testing. Directed from Beltsville, Md.; local supervision by J. McD. McCOWN, assistant scientific aid, in charge.

Charleston

United States Regional Vegetable Breeding Laboratory.—About 7 miles west of Charleston, on U. S. Route 17. Can be reached by bus from Charleston. Telephone, County 8202.

Fruit and Vegetable Crops and Diseases.—This is a regional laboratory and station, planned to serve primarily the territory embraced in 13 Southeastern States. Basic studies are conducted in the genetics, pathology, structure, and physiology of vegetable crop plants for the orderly development of varieties of high quality, increased nutritive value and disease resistance, and improved adaptation to the Southeastern States (cooperation with Agricultural Experiment Stations of Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Arkansas, Oklahoma, Texas). B. L. WADE, principal geneticist, in charge.

Breeding snap beans and peas for disease resistance and adaptability to the Southeast. B. L. WADE, principal geneticist, in charge.

Breeding tomatoes and watermelons for disease resistance and adaptability to the Southeast. C. F. ANDRUS, pathologist, in charge.

Breeding sweet corn and cabbage for disease resistance and adaptability to the Southeast. S. H. YARNELL, senior geneticist, in charge.

Breeding lima beans, carrots, and asparagus for disease resistance and adaptability to the Southeast. J. E. WELCH, associate horticulturist, in charge.

Clemson

State Agricultural Experiment Station (cooperative investigations).—About 1½ miles from Southern Railway station at Clemson. Reached by the Greenville, S. C., to Atlanta, Ga., bus.

Cotton and Other Fiber Crops and Diseases (cooperation with Clemson Agricultural College, U. S. Production and Marketing Administration, and South Carolina Extension Service).—Investigations in cotton plant physiology and diseases. G. M. ARMSTRONG, collaborator, in charge. Telephone, 5722.

Cotton fiber and spinning investigations (cooperation with Production and Marketing Administration). J. M. COOK, cotton technologist, in charge. Telephone, 3061.

Farm Power and Machinery.—Investigations to develop effective field methods and machinery for the production, harvesting, and storing of sweetpotatoes for food, feed, and industrial uses (cooperation with Mississippi Agricultural Experiment Station, U. S. Bureau of Animal Industry, U. S. Bureau of Agricultural and Industrial Chemistry, and United States Sugar Corporation). J. K. PARK, agricultural engineer, in charge. Located in Agricultural Engineering Department. Telephone, 5522.

Forage Crops and Diseases.—Soybean investigations. W. R. PADEN, collaborator, in charge. In Department of Agronomy.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). A. M. MUSSER, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under humid conditions. MACK DRAKE, associate soil scientist, in charge. Telephone, 5721.

Florence

Pee Dee Experiment Station, State Agricultural Experiment Station (cooperative investigations).—About 3 miles north of railroad station (Atlantic Coast Line R. R. and Seaboard Air Line Ry.) and 2½ miles from center of town on Darlington Road. Transportation arrangements can be made in advance. Telephone, 1834.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton breeding and improvement, genetics, and cytogenetics. W. H. JENKINS, agronomist, in charge.

Tobacco, Medicinal, and Special Crops.—Flue-cured investigations, including kinds of soil best suited to these types of tobacco; fertilizer requirements of the crop; tobacco variety tests; cropping systems of tobacco; tobacco diseases and their control. J. F. BULLOCK, agronomist, in charge.

Johns Island

Cooperative Field Investigations (cooperation with State Agricultural Experiment Station and Edmund Seabrook, Johns Island, S. C.).—On Johns Island, near Charleston. Not served by common carrier. Communicate in advance with R. S. BAILEY, Wadmalaw Island P. O., S. C.

Cotton and Other Fiber Crops and Diseases.—Sea-island cotton improvement investigations. R. S. BAILEY, scientific aid, in charge.

SOUTH DAKOTA

Brookings

State Agricultural Experiment Station (cooperative investigations).—About 1 mile northeast of center of Brookings (Chicago & North Western Ry.). Can be reached by bus from railroad and bus stations.

Forage Crops and Diseases.—Soybean and sweetclover investigations. E. L. Erickson, collaborator, in charge.

Newell

United States Belle Fourche Field Station.—One mile west and three-fourths mile north from Newell (Chicago & North Western Ry. and State Route 79). Visitors will be met at Newell by automobile from field station. Telephone, 4941.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; varietal tests; livestock investigation and pasturing and winter feeding experiments (cooperation with State Agricultural Experiment Station and U. S. Bureau of Animal Industry); investigations in damage of seeped lands. H. E. Weakly, associate agronomist and superintendent, in charge.

Soil management and crop production under dry-land conditions. A. E. Osenbrug, associate agronomist, in charge.

TENNESSEE

Crossville

Plateau Experiment Station, State Agricultural Experiment Station (cooperative investigations)—Five miles west of Crossville. Can be reached by bus from Crossville.

Fruit and Vegetable Crops and Diseases.—Potato breeding investigations. Directed by T. P. Dykstra, Baton Rouge, La.; local supervision by J. J. Bird, of the State Agricultural Experiment Station, in charge.

Greeneville

Tobacco Experiment Station, State Agricultural Experiment Station (cooperative investigations).—On R. F. D. 11, about 5 miles from Southern Railway station. Visitors will be met at Greeneville by experiment station bus. Telephone, 255.

Tobacco, Medicinal, and Special Crops.—Burley tobacco investigations, including types of soil best adapted to the variety, fertilizer requirements, methods of growing, curing, and handling, and disease control with special reference to the development of improved disease-resistant strains of burley tobacco; investigations in breeding and growing tobacco of high nicotine content for use in insecticides. J. L. Vandiver, agent, in charge.

Knoxville

Soil Survey Office, Southern States.—New Sprankle Building, 508 Union Avenue. Telephone, 2–7181, extension 363.

Soil Survey.—Soil types are identified, defined, and classified on the basis of their characteristics, and county soil maps are prepared, showing their distribution. Soil survey reports are written, describing the soil types in terms of both their morphology and their crop adaptability and production under farm practices. (This work is carried on cooperatively with the Tennessee Valley Authority, State Agricultural Experiment Stations of the region, and in many counties with the Soil Conservation Service or other interested Federal agencies.) Soil maps and relevant soil data are used to guide regional programs of agricultural production, adjustment, and conservation and for the demonstration and extension of scientific and practical farm practices and rural-land utilization. The work of the inspectors, assistant inspectors, and other soil scientists is under the supervision of R. W. SIMONSON, soil scientist, regional inspector, in charge. J. W. MOON, soil scientist, regional analyst, has supervision of the projects cooperative with the Tennessee Valley Authority. Subheadquarters: Lexington, Ky.; Raleigh, N. C.; and Blacksburg, Va.

State Agricultural Experiment Station (cooperative investigations).—About 10 minutes' ride by streetcar from railroad station. Telephone, 2–7163.

Cereal Crops and Diseases.—Breeding corn for the South and developing improved methods of breeding corn. F. D. RICHEY, principal agronomist, in charge. Extension 51.

Cotton and Other Fiber Crops and Diseases.—Cotton breeding and improvement; genetics and cytogenetics. Office in Corn and Laboratory Building. D. M. SIMPSON, agronomist and superintendent, in charge. Extension 48.

Forage Crops and Diseases.—Soybean investigations. L. N. SKOLD, collaborator, in charge.

TEXAS

Beaumont

Substation No. 4, State Agricultural Experiment Station (cooperative investigations).—Five miles west of Beaumont on U. S. Route 90, just north of Amelia. Telephone, 2–3832.

Cereal Crops and Diseases.—Pathologic investigations of rice, including identification of disease-producing organisms, varietal resistance, and other phases of disease control. E. C. TULLIS, pathologist, in charge.

Agronomic investigations with rice, including varietal comparisons, genetic and breeding investigations, and cultural and irrigation studies. H. M. BEACHELL, associate agronomist, in charge.

Forage Crops and Diseases.—Studies on pasture establishment and management with rice; seed production of grasses and legumes; improvement and testing of forage species adapted to riceland agriculture. H. M. BEACHELL, associate agronomist, in charge.

Big Spring

United States Big Spring Field Station.—One mile north of Big Spring (Texas & Pacific Ry.). Transportation arrangements can be made by communicating with F. E. KEATING. Telephone, 330.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; varietal tests and investigations on rate and date of seeding of cotton; varietal tests of grapes and other fruit; conifer planting; cattle-feeding investigations (cooperation with State Agricultural Experiment Station and U. S. Bureau of Animal Industry). F. E. KEATING, associate agronomist and superintendent, in charge.

Brownwood

United States Pecan Field Station.—About one-half mile from center of Brownwood (St. Louis-San Francisco Ry. and Gulf, Colorado & Santa Fe Ry.). Telephone, 2695.

Fruit and Vegetable Crops and Diseases.—Studies on phony and other virus diseases of peach, plum, and cherry. Directed by L. C. COCHRAN, senior pathologist, Riverside, Calif.

Pecan culture, irrigation, and breeding investigations. C. L. SMITH, physiologist, in charge.

Chillicothe

Substation No. 12, State Agricultural Experiment Station (cooperative investigations).—Four and one-half miles south and a little west, on the main highway from Chillicothe (Fort Worth & Denver City Ry.). Communicate with J. R. QUINBY, superintendent, regarding transportation arrangements. Telephone, 1621–F–3.

Cereal Crops and Diseases.—Agronomic investigations with sorghums with special attention to breeding new sorghum varieties and the study of sorghum genetics. J. C. STEPHENS, associate agronomist, in charge.

Forage Crops and Diseases.—Sudan grass and soybean investigations. J. R. QUINBY, agent, in charge.

College Station

State Agricultural Experiment Station (cooperative investigations).—Field plantings at Milano, 40 miles northwest of College Station (Southern Pacific R. R. and International & Great Northern Ry.). Telephone G. A. RUSSELL regarding transportation arrangements. Telephone, Bryan College Station, exchange 4–7639.

Cereal Crops and Diseases.—Breeding of improved adapted varieties of wheat, oats, barley, and flax, particularly disease-resistant varieties. E. S. McFADDEN, associate agronomist, in charge. Telephone, 4–6434.

Cotton and Other Fiber Crops and Diseases.—Investigations in cotton diseases and methods of control. L. M. BLANK, pathologist, in charge.

Investigations in cotton plant physiology. F. M. EATON, senior physiologist, in charge.

Investigations in cotton breeding, genetics, and improvement. T. R. RICHMOND, agronomist, in charge.

Cotton improvement in standardized one-variety communities. F. C. ELLIOTT, agent, in charge.

Forage Crops and Diseases.—Soybean investigations. E. B. REYNOLDS, collaborator, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). P. A. YOUNG, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production research. J. E. ADAMS, agent and senior agronomist, in charge.

Soil Survey.—Subheadquarters, Great Plains States. See Nebraska, Lincoln: Soil Survey Office, page 84. 303 Agricultural Experiment Station Building. E. H. TEMPLIN, soil scientist, in charge. Telephone, 4–7144.

Tobacco, Medicinal, and Special Crops.—Experiments with devils-shoestrings to determine cultural requirements, toxicity, and commercial possibilities as a crop-yielding insecticide material. G. A. RUSSELL, agent, in charge; V. A. LITTLE, collaborator. Telephone, 4–7639.

Dalhart

United States Dalhart Field Station.—Three miles southwest of Dalhart (Chicago, Rock Island & Pacific Ry. and Fort Worth & Denver City Ry.). Can be reached by automobile, or telephone B. F. BARNES regarding transportation arrangements. Telephone, 913–F–3.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; forestry investigations (cooperation with Forest Service); regrassing experiments; varietal experiments with grapes and other fruit; sorghum experiments. B. F. BARNES, associate agronomist, superintendent, in charge.

Denton

Substation No. 6, State Agricultural Experiment Station (cooperative investigations).—Five miles northwest of Denton, one-half mile north of Denton-Decatur Highway, State Route 24. Transportation arrangements can be made by telephoning 678.

Cereal Crops and Diseases.—Breeding barley, flax, and oats for improved adaptation; control of barley and oat diseases; breeding soft red and hard red winter wheat; and control of wheat rust and smuts. I. M. ATKINS, agronomist, in charge.

Greenville

United States Cotton Field Station.—Three and one-half miles southwest of Greenville (Southern Pacific R. R., Missouri, Kansas & Texas Ry., and St. Louis Southwestern Ry.), on U. S. Route 67 (Bankhead Highway). Communicate with D. R. HOOTON regarding transportation arrangements. Telephone, 402.

Cotton and Other Fiber Crops and Diseases (cooperation with Greenville Chamber of Agriculture, Commerce and Industry, State Agricultural Equipment Station, and State Extension Service).—Investigations on cotton improvement, genetics, botany, morphology, and plant physiology and culture, and on cotton disease control. D. R. HOOTON, associate agronomist and superintendent, in charge.

Cotton improvement in standardized one-variety communities. R. F. SAUNDERS, senior agronomist, in charge.

Harlingen

United States Horticultural Field Laboratory.—Building T–303, Harlingen Airport. Telephone, 1876.

Fruit and Vegetable Crops and Diseases.—Investigations on the handling, transportation, and, storage of fruits and vegetables. A. L. RYALL, horticulturist, in charge.

Lubbock

Substation No. 8, State Agricultural Experiment Station (cooperative investigations).—About 4 miles east of Lubbock. City bus within about one-fourth mile of station.

Forage Crops and Diseases.—Soybean investigations. H. D. LYNN, agent, in charge.

Weslaco

Substation No. 15, State Agricultural Experiment Station (cooperative investigations).—About 1½ miles south of Weslaco (Missouri Pacific R. R.). Telephone W. H. FRIEND, superintendent, regarding transportation.

Fruit and Vegetable Crops and Diseases.—Tests of citrus stocks for adaptation and disease resistance. W. C. COOPER, physiologist, in charge.

Winter Haven

Substation No. 19, State Agricultural Experiment Station (cooperative investigations).—About 5 miles from Crystal City and 7 miles from Carrizo Springs on the International & Great Northern Railway. Telephone the superintendent at Crystal City 910–F–4, regarding transportation.

Fruit and Vegetable Crops and Diseases.—Investigations on onion culture, breeding, and diseases. Directed from Beltsville, Md.; local supervision by B. A. PERRY, collaborator, in charge.

UTAH

Logan

State Agricultural Experiment Station (cooperative investigations).—About 1 mile east of the

Union Pacific Railroad station. Can be reached by bus. Telephone, 100.

Cereal Crops and Diseases.—Cereal improvement, with major interests in wheat and barley breeding and testing. Special interests include dwarf bunt studies and barley genetics. Oat and corn varieties are tested for their adaptation to the State. Varietal testing is done at such representative areas as Nephi and Cedar City, official college stations. R. W. Woodward, associate agronomist, in charge. Telephone, 909-W.

Forage Crops and Diseases.—Alfalfa breeding, improvement, and seed production investigations. J. W. Carlson, agronomist, in charge.

Grass breeding, improvement, and pasture and range investigations (cooperation with Forest Service). Wesley Keller, geneticist, in charge.

Fruit and Vegetable Crops and Diseases.—Breeding tomatoes for resistance to curly top and verticillium wilt; investigations of bacterial canker, mosaic, and other diseases of tomatoes. H. L. Blood, pathologist, in charge.

Investigations of cultural practices affecting yield and quality of vegetable seed crops. L. R. Hawthorn, horticulturist, in charge.

Investigations on virus diseases of stone fruits (at various points in the State). Directed by B. L. Richards of the State Agricultural Experiment Station.

Investigations on onion culture, breeding, and diseases. L. H. Pollard, collaborator, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation; water storage and movement in soils. O. J. Kelley, senior soil scientist, in charge. Telephone, 100, extension 94.

Salt Lake City

United States Nematology Field Laboratory.—Located in Post Office Building, within walking distance from railroad station. Can be reached by streetcar. Telephone, 4–2552.

Nematology.—General problems related to nematode diseases of plants in the Rocky Mountain region and California; sugar beet, alfalfa, and clover nematode investigations; potato rot nematode investigations; soil fumigation work. GERALD THORNE, nematologist, in charge. The potato rot nematode work is in cooperation with the Agricultural Experiment Station of the University of Idaho at Aberdeen.

United States Sugar Plant Field Laboratory.—Office and laboratory, 1810 South Main Street. Can be reached by streetcar from railroad station. Telephone, Salt Lake 6–7676.

Sugar Plant Investigations.—Breeding of curly top resistant sugar beets; physiology of sugar beet seed production. Experimental work at this laboratory devoted chiefly to curly top disease investigations, including agronomic investigations, with sugar beets and sugar beet seed production. F. V. OWEN, senior geneticist, in charge.

VIRGINIA

Blacksburg

State Agricultural Experiment Station (cooperative investigations).—Take train (Norfolk & Western Ry.) to Christiansburg and taxi from Christiansburg to Blacksburg. Telephone, 2952.

Farm Electrification.—Drying of hay and forage crops on the farm. R. B. DAVIS, senior agricultural engineer, in charge.

Forage Crops and Diseases.—Soybean investigations. M. H. MCVICKAR, collaborator, in charge.

Soil Survey.—Subheadquarters, Southern States. See Tennessee, Knoxville: Soil Survey Office, page 112. 239 Natural Science Building. S. S. OBENSHAIN, agent and soil scientist, in charge.

Tobacco, Medicinal, and Special Crops.—Tobacco disease investigations. R. G. HENDERSON, collaborator, in charge.

Norfolk

Virginia Truck Experiment Station (cooperative investigations).—Seven miles east of Norfolk at Diamond Springs. Can be reached by Virginia Beach and Deep Creek Ferry Roads. Telephone, 22816.

Fruit and Vegetable Crops and Diseases.—Breeding and testing improved vegetable strains and varieties for superior adaptation (cooperation with United States Regional Vegetable Breeding Laboratory at Charleston, S. C.). V. A. TIEDJENS, collaborator, in charge.

WASHINGTON

Mount Vernon

Northwest Washington Agricultural Laboratory (cooperative investigations).—About 2½ miles from town, and must be reached by private transportation. Telephone field laboratory 7058, office 1671.

Fruit and Vegetable Crops and Diseases.—Investigations of diseases and cultural practices influencing yield and quality of seed of vegetable crops (cooperation with State Agricultural Experiment Station). D. M. MCLEAN, associate plant pathologist, in charge.

Prosser

Irrigation Branch Experiment Station, State Agricultural Experiment Station (cooperative investigations).—Five miles northeast of Prosser (Northern Pacific Ry.). Transportation to station may be arranged by calling H. P. SINGLETON, superintendent. Telephone, 93002.

Cereal Crops and Diseases.—Investigations on methods for weed control in irrigated ditches and on irrigated land. V. F. BRUNS, agent, in charge.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under irrigation (cooperation with U. S. Bureau of Reclamation); fertilization, irrigation practices and methods, crop adaptation, and plant disease control on newly irrigated lands. H. P. SINGLETON, senior agronomist and superintendent, in charge.

Pullman

State Agricultural Experiment Station (cooperative investigations).—About 1¼ miles from Northern Pacific Railway and Union Pacific Railroad stations. Pullman can also be reached by bus from Spokane. Telephone, 4051.

Cereal Crops and Diseases.—Agronomic and disease investigations of wheat, including improvement, varietal testing, and genetic studies, especially for quality and resistance to bunt. O. A. VOGEL, agronomist, in charge.

Investigations on cereal diseases in the Pacific Northwest, including bunt and flag smut, snow mold, and foot rots of wheat and the smuts of oats, including physiologic specialization, seed treatment, and determination of varietal resistance. C. S. HOLTON, pathologist, in charge.

Investigations on the quality of wheat varieties, including milling, baking, chemical, physical, and other properties. M. A. BARMORE, chemist, in charge.

Forage Crops and Diseases.—Grass breeding, improvement, and pasture investigations (cooperation with Soil Conservation Service). V. E. COMSTOCK, assistant agronomist, in charge.

Grass diseases (cooperation with Soil Conservation Service). G. W. FISCHER, collaborator, in charge.

Puyallup

Western Washington Agricultural Experiment Station (cooperative investigations).—About 2 miles west of Puyallup (Northern Pacific Ry., Great Northern Ry., Union Pacific R. R., and Chicago, Milwaukee, St. Paul & Pacific R. R.). Telephone, 510.

Nematology Investigations.—General problems related to plant diseases caused by nematodes in Washington and Oregon; particularly investigations on nematode diseases of grass seeds and of ornamental bulbs, such as narcissus, iris, and Easter lilies; transfer studies as related to crop rotation; and soil fumigation for nematode control. W. D. COURTNEY, associate nematologist, in charge.

Wenatchee

United States Horticultural Field Laboratory.—Post Office Annex, Mission and Yakima Streets, 3 blocks from Great Northern Railway station and 4 blocks from motor coach depot. Motor coach service also from Seattle and Spokane. Telephone, 349.

Fruit and Vegetable Crops and Diseases.—Investigations of factors affecting fruit production; including studies on nutritional diseases of fruit trees, on soil management, fruit thinning, and hormone sprays. L. P. BATJER, senior pomologist, in charge.

Investigations in fruit and vegetable handling, transportation, and storage, including studies on fruit maturity, precooling, and storage diseases. EDWIN SMITH, senior horticulturist, in charge.

Virus diseases of stone fruits; their symptoms, transmission, and control. E. L. REEVES, pathologist, in charge.

WISCONSIN

Madison

State Agricultural Experiment Station (cooperative investigations).—About 2½ miles west of Chicago & North Western Railway station. Take cars marked "Nakoma" or "Wingra Park" that go out University Avenue within 1 block of Horticultural and New Agronomy Buildings. Telephone, Badger 580.

Cereal Crops and Diseases.—Investigations of pathologic and physiologic phases of wheat and barley scab, and related rot diseases of corn; studies on control of helminthosporium diseases of barley; studies on malting evaluation of barley selections and varieties; methods of evaluating quality in barley; and breeding investigations with barley and wheat. J. G. DICKSON, agent, in charge.

Cotton and Other Fiber Crops and Diseases.—Experiments in cultivation of varieties and retting of hemp at the Experiment Station Farm. K. P. BUCHHOLTZ, agent, in charge.

Forage Crops and Diseases.—Alfalfa and sweetclover breeding, production, and disease investigations. F. R. JONES, senior pathologist, and W. K. SMITH, agent, in charge.

Clover breeding and disease investigations. E. W. HANSON, pathologist, in charge.

Grass breeding and pasture improvement investigations. E. L. NIELSEN, agronomist, in charge.

Soybean investigations: Breeding, J. H. TORRIE, collaborator; diseases, F. R. JONES, senior pathologist, in charge.

Fruit and Vegetable Crops and Diseases.—Cabbage disease investigations, including breeding for resistance to yellows, mosaic, and clubroot. J. C. WALKER, collaborator, and R. H. LARSON, pathologist, in charge.

Investigations on diseases of onions and their control. Directed from Beltsville, Md.; local supervision by J. C. WALKER, collaborator, in charge.

Soil Survey.—Subheadquarters, Northern States. See Maryland, Beltsville, page 69, Soil Survey Office. R. J. MUCKENHIRN, soil scientist, agent, in charge, 303 Soils Building. Extension 276.

Tobacco, Medicinal, and Special Crops.—Cigarbinder investigations, including laboratory and field investigations on diseases of tobacco and their control; investigations in breeding and growing tobacco of high nicotine content for use in insecticides. James Johnson, collaborator, in charge.

United States Forest Pathology Field Laboratory (cooperation with U. S. Forest Service and University of Wisconsin).—Located at Forest Products Laboratory. Can be reached by bus from railroad and bus stations. Telephone, Gifford 6000, extension 8.

Forest Pathology.—Investigations of decays and disease defects of lumber and other forest products, including sap stains; and tree diseases, including those that affect timber stands, young natural stands and plantations, and street and shade trees. C. A. Richards, pathologist, in charge.

WYOMING

Archer

Archer Field Station, State Agricultural Experiment Station (cooperative investigations).—One mile southeast of Archer (Union Pacific R. R.), about 10 miles east of Cheyenne, and one-half mile south of Lincoln Highway (U. S. Route 30). Address, Box 298, Cheyenne. Union Pacific and Burlington busses will stop one-half mile north of station or arrangements can be made for transportation by telephoning A. L. Nelson, superintendent. Telephone, 2–2105.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; soil and water conservation practices and sheep grazing experiments (cooperation with Soil Conservation Service); grass variety and planting experiments (cooperation with Soil Conservation Service); cereal hay experiments. A. L. Nelson, associate agronomist, superintendent, in charge.

Cheyenne

Cheyenne Horticultural Field Station.—Six and one-half miles northwest of Cheyenne. No bus transportation beyond Fort Francis E. Warren, which is 2½ miles from the station. Transportation arrangements can be made by communicating with the station office. Telephone, 7211.

Fruit and Vegetable Crops and Diseases.—Breeding, testing, and evaluating tree and bush fruits for adaptation in the central Great Plains; breeding strawberries and raspberries for hardiness and quality; adaptation studies with peas and other vegetables; breeding and genetics of tomatoes and cucurbits; cooperative farm windbreak tests; studies on adaptation of tree and shrub species for farm windbreak use. A. C. HILDRETH, principal plant pathologist and superintendent, in charge.

Sheridan

United States Sheridan Field Station.—Seven miles east of Sheridan (Chicago, Burlington & Quincy R. R.) on Wyarno Road. Taxi service available or arrangements for transportation can be made by telephoning superintendent. Telephone, 8505.

Soils, Fertilizers, and Irrigation.—Soil management and crop production under dry-land conditions; shelterbelt investigations; garden and fruit investigations; variety tests of cereal and forage crops; grazing and feeding experiments with sheep and swine (cooperation with State Agricultural Experiment Station and University of Wyoming); grass investigations (cooperation with Soil Conservation Service). C. R. HILLS, agent and acting superintendent, in charge.

FOREIGN STATIONS

The Bureau of Plant Industry, Soils, and Agricultural Engineering, through its Division of Rubber Plant Investigations, conducts a cooperative research and technical guidance program for encouragement of cultivated rubber production in the Western Hemisphere. This program is carried on under an allotment from the Department of State "For Cooperation with the American Republics."

Cooperative investigations are conducted at three regional field stations, supported mainly by the United States, and at Federal stations or rubber-development centers of 13 tropical American countries. In each case, the experiments are carried out on lands furnished by the cooperating agency. Research is conducted on farm practices, including soil cover and intercrops, suited to the growing and production of improved strains of the hevea rubbertree obtained by jungle selection and breeding. Initial supplies of budded stumps or budwood of superior strains are furnished cooperating countries for local propagation and distribution. Technical assistance is provided local agencies engaged in developing rubber-production programs.

Through the Division of Fruit and Vegetable Crops and Diseases the Bureau conducts in Brazil studies on the nature of the tristeza disease of citrus, its mode of spread, and the susceptibility or resistance of various citrus varieties useful for fruit production or for rootstock.

Brazil

PARÁ

Belem

Instituto Agronomico do Norte (cooperation with Ministerio da Agricultura).—Located about 3½ miles from Belem, Pará, and can be reached by streetcar. Arrangements should be made in advance by writing to American Consulate, Belem, Pará, Brazil.

Agronomic studies and collection and study of wild hevea species and varieties. HANS G. SORENSEN, senior agronomist, agent.

Colombia

ANTIOQUIA

Medellin

Campo Experimental de la Villa Arteaga (cooperation with Ministerio de la Economia Nacional).—About 175 miles by highway from Medellin. Visitors should make advance arrangements through Hans G. Sorensen, in care of American Consulate, Medellin, Colombia.

Clone tests and field management studies of rubber on Villa Arteaga demonstration plantation; technical assistance on rubber planting projects. Hans G. Sorensen, senior agronomist, agent.

Costa Rica

Guapiles

Los Diamantes Experiment Farm (cooperation with Secretaria de Agricultura y Industria).—Reached by rail from San Jose or Port Limon on the Northern Railway via Siquirres and "Old Line" branch to Los Diamantes. Visitors should make advance arrangements through E. P. Imle, U. S. D. A. Cooperative Rubber Plant Field Station, Turrialba, Costa Rica, or Agricultural Attaché, American Embassy, San Jose, Costa Rica.

Field studies of hevea cultivation, breeding, and testing of selected clones, and the multiplication and distribution of plant material. W. E. Manis, agronomist, agent.

Turrialba

U. S. D. A. Cooperative Rubber Plant Field Station (cooperation with Secretaria de Agricultura y Industria).—About 3 hours by rail or highway from San Jose. Advance arrangements should be made with E. P. Imle, U. S. D. A. Cooperative Rubber Plant Field Station, Turrialba, Costa Rica, or through

Agricultural Attaché, American Embassy, San Jose, Costa Rica.

Field headquarters for investigations of leaf blight and for the development of superior disease-resistant clones of the hevea rubbertree. E. P. IMLE, senior pathologist, in charge.

Dominican Republic

Ciudad Trujillo

Campo Experimental del Caucho (cooperation with Secretaria de Estado, Agricultura, Industria y Trabajo).—Located near Piedra Blanca on the Duarte Highway about 50 miles from Ciudad Trujillo. Visitors should make advance arrangements through H. F. ALLARD, care of American Embassy, Ciudad Trujillo, Dominican Republic.

Cooperative agronomic tests and technical assistance to the Dominican Republic's rubber planting program. H. F. ALLARD, agronomist.

Ecuador

Pichilingue (Guayaquil)

Estación Experimental Agrícola del Ecuador (cooperation with Ministerio de Agricultura and U. S. Office of Foreign Agricultural Relations).—Visitors should make advance arrangements through the Director of Estación Experimental Agrícola del Ecuador, Casilla de Correo 259, Quito, Ecuador.

Local testing, multiplication, and distribution of improved strains of hevea. Assistance from HANS G. SORENSON, senior agronomist, Medellin, Colombia.

Guatemala

Cuyotenango

U. S. D. A. Cooperative Rubber Plant Propagation Center (Finca Trapiche Grande) (cooperation with Ministerio de Agricultura, Instituto

Agropecuario Nacional, and U. S. Office of Foreign Agricultural Relations).—About 112 miles from Guatemala City by railway or highway. Trapiche Grande is 3 miles from Cuyotenango by highway. Visitors should make advance arrangements with J. FORRES O'DONNAL or L. A. BEERY, JR., care of American Embassy, Guatemala City.

Technical assistance to plantation and small-farm rubber planters, and multiplication and distribution of superior planting material. J. FORRES O'DONNAL, agronomist, and agent, in charge.

Guatemala City

Field Headquarters (*cooperation with Ministerio de Agricultura*).—Visitors should make advance arrangements through L. A. BEERY, JR., care of American Embassy, Guatemala City.

Regional adviser and director of the experimental work, including breeding, selection, and agronomic testing of new clones in Guatemala, Honduras, and Nicaragua. L. A. BEERY, JR., senior agronomist, in charge.

Haiti

Marfranc (Jerémie)

U. S. D. A. Cooperative Rubber Plant Field Station (*cooperation with Secretaire d'Etat de l'Instruction Publique et l'Agriculture*).—Jerémie can be reached by phone from Port-au-Prince or by automobile, the distance being 210 miles. Marfranc and the Station are 12 miles southeast of Jerémie and can be reached by automobile. Advance arrangements should be made through A. W. BECHTEL.

Field headquarters for breeding work, agronomic experiments, and multiplication and distribution of planting material. A. W. BECHTEL, horticulturist, in charge.

Honduras

Tela

San Alejo Experimental Plantation (cooperation with Ministerio de Agricultura, Tela Railroad Co., and United Fruit Co.).—Arrangements for visiting should be made in advance through V. C. DUNLAP, Research Department, United Fruit Company, La Lima, Honduras.

Propagation, testing, and distribution of superior strains of hevea; seed collection and distribution; technical assistance to local cooperators. Technical direction by L. A. BEERY, JR., senior agronomist, from Guatemala City, Guatemala; local supervison by L. G. MERCADO, agronomist, United Fruit Co.

Mexico

DISTRITO FEDERAL

Mexico

Field Headquarters.—Edificio Imperial, Room 316, Paseo de La Reforma 64, Mexico, D. F. Visitors should make advance arrangements through T. D. MALLERY or through the Agricultural Attaché.

Coordinator of cooperative programs and technical advisor of Chiapas and Tabasco rubber planting projects (cooperation with Secretaria de Agricultura y Fomento). T. D. MALLERY, senior agronomist.

VERA CRUZ

Tezonapa

Campo Experimental de Hule "El Palmar" (cooperation with Secretaria de Agricultura y Fomento).—About 10 miles from Tezonapa, Vera Cruz, and is reached by automobile from that place. Telephone, Cozolapa 15. The post office address is Apartado 19, Cozolapa, Oaxaca, Mexico. Visitors should make advance arrangements with R. E. Stadelman.

Cooperative disease and clone-testing investigations and technical assistance on the El Palmar Valley rubber planting program. R. E. Stadelman, agronomist and agent.

Nicaragua

Bluefields

Estación Experimental de El Recreo (cooperation with Servicio Tecnico Agricola, Ministerio de Agricultura, and U. S. Office of Foreign Agricultural Relations).—Visitors should make arrangements in advance with L. A. Long, Servicio Tecnico Agricola, Bluefields, Nicaragua, or through the American Embassy, Managua.

Local testing, multiplication, and distribution of high-yielding strains of hevea. Technical direction by L. A. Beery, Jr., Guatemala City, Guatemala; local supervision by L. A. Long, Director, Servicio Tecnico Agricola.

Panama

Gatun, C. Z.

Rubber Substation of the Inter-American Institute of Agricultural Sciences (cooperation with Ministerio de Agricultura y Comercio).—Box No. 2, Gatun, C. Z. Visitors should make advance arrangements with Julius Matz, Summit, Pedro Miguel, C. Z.

Local testing of hevea clones, breeding investigations, and seed collection and distribution. Direction from Turrialba, Costa Rica.

Peru

Tingo Maria

Estación Central de Colonizacion en Tingo Maria (cooperation with Ministerio de Agricultura, Corporacion Peruana del Amazonas, and U. S. Office of Foreign Agricultural Relations).—Can be reached by plane or highway from Lima, Peru. Visitors should make advance arrangements through the Director. Estación Central de Colonizacion en Tingo Maria, Tingo Maria, Peru.

Studies on the identification and control of diseases of the hevea rubbertree, selection and testing of jungle trees, and technical assistance to official cooperators. J. B. CARPENTER, pathologist.

Trinidad, British West Indies

Port-of-Spain

St. Augustine Station (cooperation with Department of Agriculture of Trinidad and Tobago).—About 8 miles from Port-of-Spain. Visitors should make arrangements through E. W. LEACH, Deputy Director of Agriculture, Port-of-Spain.

Local testing of improved hevea strains; regional leaf-blight-resistance tests by M. H. LANGFORD, Turrialba, Costa Rica; technical assistance on field operations by A. W. BECHTEL, Marfranc, Haiti; local supervision by R. J. DEAN, Director, St. Augustine Station.

INDEX OF FIELD ACTIVITIES BY DIVISIONS

- *Agricultural Engineering:*
  - *Farm Buildings and Rural Housing:*
    - California:
      - Davis, 28
    - Colorado:
      - Fort Collins, 34
    - Georgia:
      - Athens, 41
    - Illinois:
      - Urbana, 49
    - Iowa:
      - Ames, 51
    - Maryland:
      - Beltsville, 70
    - Missouri:
      - Columbia, 80
  - *Farm Electrification:*
    - Connecticut:
      - Storrs, 36
    - Georgia:
      - Tifton, 45
    - Indiana:
      - La Fayette, 50
    - Maryland:
      - Beltsville, 71
    - North Carolina:
      - Oxford, 91
    - Virginia:
      - Blacksburg, 120
  - *Farm Power and Machinery:*
    - Alabama:
      - Auburn, 21
    - Colorado:
      - Fort Collins, 34
    - Georgia:
      - Tifton, 45
    - Louisiana:
      - Houma, 58

Agricultural Engineering—Continued
- *Farm Power and Machinery*—Continued
  - Maryland:
    - Beltsville, 71
  - Michigan:
    - East Lansing, 73
  - Mississippi:
    - Stoneville, 79
  - Ohio:
    - Toledo, 98
  - South Carolina:
    - Clemson, 109

- *Mechanical Processing of Farm Products:*
  - Florida:
    - Belle Glade, 37
    - Boynton, 37
  - Maryland:
    - Beltsville, 71
  - Mississippi:
    - Stoneville, 80
  - Oregon:
    - Corvallis, 103

Cereal Crops and Diseases:
- Arizona:
  - Phoenix, 22
  - Sacaton, 23
- Arkansas:
  - Stuttgart, 25
- California:
  - Biggs, 27
  - Davis, 27
- Colorado:
  - Denver, 33
- Georgia:
  - Experiment, 43
  - Tifton, 45
- Idaho:
  - Aberdeen, 47
  - Boise, 47
  - Moscow, 47
- Illinois:
  - Urbana, 48

Cereal Crops and Diseases—Continued
- Indiana:
  - La Fayette, 50
- Iowa:
  - Ames, 50
- Kansas:
  - Hays, 53
  - Manhattan, 54
- Louisiana:
  - Baton Rouge, 56
  - Crowley, 57
- Maryland:
  - Beltsville, 60
- Minnesota:
  - St. Paul, 74
- Mississippi:
  - State College, 78
- Missouri:
  - Columbia, 80
  - Elsberry, 81
- Montana:
  - Bozeman, 82
- Nebraska:
  - Lincoln, 83
- New York:
  - Ithaca, 90
- North Carolina:
  - Raleigh, 92
- North Dakota:
  - Fargo, 96
  - Langdon, 96
- Ohio:
  - Wooster, 99
- Oklahoma:
  - Stillwater, 100
  - Woodward, 101
- Oregon:
  - Moro, 105
  - Pendleton, 106
- Tennessee:
  - Knoxville, 113

Cereal Crops and Diseases—Continued
- Texas:
  - Beaumont, 113
  - Chillicothe, 115
  - College Station, 115
  - Denton, 117
- Utah:
  - Logan, 119
- Washington:
  - Prosser, 121
  - Pullman, 122
- Wisconsin:
  - Madison, 123

Cotton and Other Fiber Crops and Diseases:
- Alabama:
  - Auburn, 21
- Arizona:
  - Sacaton, 23
- Arkansas:
  - Fayetteville, 24
  - Little Rock, 25
- California:
  - Riverside, 30
  - Shafter, 32
- Florida:
  - Belle Glade, 37
  - Boynton, 37
  - Gainesville, 39
- Georgia:
  - Athens, 41
  - Atlanta, 42
  - Experiment, 43
  - Tifton, 45
- Kentucky:
  - Lexington, 55
- Louisiana:
  - Baton Rouge, 56
- Maryland:
  - Beltsville, 62
- Mississippi:
  - Jackson, 76
  - State College, 78
  - Stoneville, 79

Cotton and Other Fiber Crops and Diseases—Con.
  New Mexico:
    State College, 88
  North Carolina:
    Raleigh, 92
    Statesville, 94
  Oklahoma:
    Stillwater, 100
    Tipton, 101
  Oregon:
    Corvallis, 102
  South Carolina:
    Clemson, 109
    Florence, 110
    Johns Island, 110
  Tennessee:
    Knoxville, 113
  Texas:
    College Station, 115
    Greenville, 117
  Wisconsin:
    Madison, 124

Forage Crops and Diseases:
  Alabama:
    Fairhope, 22
  Arkansas:
    Stuttgart, 25
  California:
    Bard, 26
  Florida:
    Gainesville, 39
  Georgia:
    Experiment, 43
    Tifton, 45
  Illinois:
    Urbana, 49
  Indiana:
    La Fayette, 50
  Iowa:
    Ames, 51
  Kansas:
    Hays, 53
    Manhattan, 54

Forage Crops and Diseases—Continued
- Kentucky:
  - Lexington, 55
- Louisiana:
  - Baton Rouge, 56
  - Crowley, 57
  - Jeanerette, 58
- Maryland:
  - Beltsville, 62, 72
- Michigan:
  - East Lansing, 73
- Minnesota:
  - St. Paul, 75
- Mississippi:
  - State College, 78
  - Stoneville, 79
- Missouri:
  - Columbia, 80
- Montana:
  - Bozeman, 82
- Nebraska:
  - Lincoln, 84
- Nevada:
  - Reno, 86
- New York:
  - Ithaca, 90
- North Carolina:
  - Raleigh, 92
- North Dakota:
  - Fargo, 96
  - Mandan, 97
- Ohio:
  - Columbus, 97
  - Wooster, 99
- Oklahoma:
  - Stillwater, 100
  - Woodward, 101
- Oregon:
  - Corvallis, 102
- Pennsylvania:
  - State College, 107
- South Carolina:
  - Clemson, 109

Forage Crops and Diseases—Continued
- South Dakota:
  - Brookings, 111
- Tennessee:
  - Knoxville, 113
- Texas:
  - Beaumont, 114
  - Chillicothe, 115
  - College Station, 116
  - Lubbock, 118
- Utah:
  - Logan, 119
- Virginia:
  - Blacksburg, 120
- Washington:
  - Pullman, 122
- Wisconsin:
  - Madison, 124

Forest Pathology:
- Arizona:
  - Tucson, 24
- California:
  - San Francisco, 32
- Connecticut:
  - New Haven, 35
- Florida:
  - Lake City, 40
- Georgia:
  - Athens, 42
- Louisiana:
  - New Orleans, 59
- Maryland:
  - Beltsville, 63
- Mississippi:
  - Gulfport, 76
  - Saucier, 77
- Missouri:
  - Columbia, 81
- New Mexico:
  - Albuquerque, 87
- New York:
  - Syracuse, 91

- *Forest Pathology*—Continued
  - North Carolina:
    - Asheville, 91
  - Ohio:
    - Columbus, 98
  - Oregon:
    - Portland, 106
  - Wisconsin:
    - Madison, 125

- *Fruit and Vegetable Crops and Diseases:*
  - Alabama:
    - Auburn, 21
    - Fairhope, 22
    - Spring Hill, 22
  - Arizona:
    - Tucson, 24
  - Arkansas:
    - Fayetteville, 25
  - California:
    - Davis, 28
    - Fresno, 28
    - Indio, 28
    - La Jolla, 29
    - Pomona, 29
    - Riverside, 30
    - Sacramento, 31
  - Colorado:
    - Fort Collins, 34
    - Greeley, 35
  - Florida:
    - Fort Lauderdale, 39
    - Gainesville, 40
    - Orlando, 40
  - Georgia:
    - Albany, 41
    - Cairo, 42
    - Experiment, 43
    - Fort Valley, 44
    - Tifton, 46
  - Illinois:
    - Chicago, 48
  - Iowa:
    - Ames, 51

Fruit and Vegetable Crops and Diseases—Con.
  Kentucky:
    Lexington, 55
  Louisiana:
    Baton Rouge, 56
    Bogalusa, 57
    Shreveport, 59
  Maine:
    Presque Isle, 60
  Maryland:
    Beltsville, 64
  Massachusetts:
    East Wareham, 73
  Michigan:
    East Lansing, 73
  Minnesota:
    St. Paul, 75
  Mississippi:
    Meridian, 76
    Poplarville, 77
    State College, 78
  New Jersey:
    Pemberton, 87
  New York:
    Babylon, 89
    Geneva, 89
    Ithaca, 90
    New York City, 90
  North Carolina:
    Raleigh, 93
    Willard, 95
  North Dakota:
    Fargo, 96
    Mandan, 97
  Oklahoma:
    Stillwater, 100
    Woodward, 102
  Oregon:
    Corvallis, 103
    Hermiston, 104
    Hood River, 104
    Medford, 105
  Rhode Island:
    Kingston, 107

Fruit and Vegetable Crops and Diseases—Con.
- South Carolina:
  - Blackville, 108
  - Charleston, 108
  - Clemson, 109
- Tennessee:
  - Crossville, 112
- Texas:
  - Brownwood, 114
  - College Station, 116
  - Harlingen, 118
  - Weslaco, 118
  - Winter Haven, 118
- Utah:
  - Logan, 119
- Virginia:
  - Norfolk, 121
- Washington:
  - Mount Vernon, 121
  - Wenatchee, 123
- Wisconsin:
  - Madison, 124
- Wyoming:
  - Cheyenne, 126

Mycology and Disease Survey:
- Maryland:
  - Beltsville, 66

Nematology Investigations:
- Georgia:
  - Tifton, 46
- Maryland:
  - Beltsville, 66
- New York:
  - Hicksville, 89
- Utah:
  - Salt Lake City, 120
- Washington:
  - Puyallup, 123

Plant Exploration and Introduction:
- California:
  - Chico, 27

Plant Exploration and Introduction—Continued
  Florida:
    Coconut Grove, 38
  Georgia:
    Savannah, 44
  Maryland:
    Beltsville, 67
    Glenn Dale, 72

Rubber Plant Investigations:
  Arizona:
    Sacaton, 23
  California:
    Pasadena, 29
    Salinas, 31
    Shafter, 32
    Stanford University, 32
  Canal Zone:
    Pedro Miguel, 33
  Florida:
    Coconut Grove, 38
  Maryland:
    Beltsville, 67
  Oregon:
    Corvallis, 103
    Klamath Falls, 104
  Puerto Rico:
    Mayaguez, 107
  Brazil:
    Pará
      Belem, 127
  Colombia:
    Antioquia,
      Medellin, 128
  Costa Rica:
    Guapiles, 128
    Turrialba, 128
  Dominican Republic:
    Ciudad Trujillo, 129
  Ecuador:
    Pichilingue (Guayaquil), 129
  Guatemala:
    Cuyotenango, 129
    Guatemala City, 130

Rubber Plant Investigations—Continued
- Haiti:
  - Marfranc (Jerémie), 130
- Honduras:
  - Tela, 131
- Mexico:
  - Distrito Federal,
    - Mexico, 131
  - Vera Cruz,
    - Tezonapa, 131
- Nicaragua:
  - Bluefields, 132
- Panama:
  - Gatun, C. Z., 132
- Peru:
  - Tingo Maria, 133
- Trinidad, B. W. I.:
  - Port-of-Spain, 133

Soils, Fertilizers, and Irrigation:
- Alabama:
  - Auburn, 21
- Arizona:
  - Yuma, 24
- California:
  - Bard, 26
  - Riverside, 30
- Colorado:
  - Akron, 33
- Iowa:
  - Ames, 52
- Kansas:
  - Colby, 52
  - Garden City, 52
  - Hays, 53
  - Manhattan, 55
- Maine:
  - Orono, 59
- Maryland:
  - Beltsville, 68
- Mississippi:
  - State College, 78

Soils, Fertilizers, and Irrigation—Continued
  Montana:
    Havre, 82
    Huntley, 82
    Moccasin, 83
  Nebraska:
    Lincoln, 84
    Mitchell, 85
    North Platte, 85
  Nevada:
    Fallon, 86
  New Mexico:
    Tucumcari, 88
  North Carolina:
    Raleigh, 93
  North Dakota:
    Dickinson, 96
    Mandan, 97
  Oklahoma:
    Lawton, 100
    Woodward, 102
  Oregon:
    Hermiston, 104
    Moro, 105
    Pendleton, 106
  South Carolina:
    Clemson, 110
  South Dakota:
    Newell, 111
  Texas:
    Big Spring, 114
    College Station, 116
    Dalhart, 116
  Utah:
    Logan, 119
  Washington:
    Prosser, 121
  Wyoming:
    Archer, 125
    Sheridan, 126

Soil Survey:
- California:
  - Berkeley, 26
- Iowa:
  - Ames, 52
- Kentucky:
  - Lexington, 55
- Maryland:
  - Beltsville, 68
- Minnesota:
  - St. Paul, 75
- Missouri:
  - Columbia, 81
- Nebraska:
  - Lincoln, 84
- New Mexico:
  - Albuquerque, 87
- New York:
  - Ithaca, 90
- North Carolina:
  - Raleigh, 93
- Tennessee:
  - Knoxville, 112
- Texas:
  - College Station, 116
- Virginia:
  - Blacksburg, 120
- Wisconsin:
  - Madison, 124

Sugar Plant Investigations:
- California:
  - Riverside, 31
- Canal Zone:
  - Pedro Miguel, 33
- Colorado:
  - Fort Collins, 34
- Florida:
  - Canal Point, 38
- Georgia:
  - Cairo, 43
- Idaho:
  - Twin Falls, 48

Sugar Plant Investigations—Continued
- Louisiana:
  - Houma, 58
- Maryland
  - Beltsville, 69
- Michigan:
  - East Lansing, 74
- Minnesota:
  - St. Paul, 75
- Mississippi:
  - Meridian, 77
- Nebraska:
  - Scottsbluff, 86
- New Mexico:
  - State College, 87
- Oregon:
  - Corvallis, 103
- Utah:
  - Salt Lake City, 120

Tobacco, Medicinal, and Special Crops:
- Arizona:
  - Sacaton, 23
- California:
  - Bard, 26
  - La Jolla, 29
  - Shafter, 32
- Florida:
  - Gainesville, 40
- Georgia:
  - Savannah, 44
  - Tifton, 46
- Idaho:
  - Moscow, 47
- Kentucky:
  - Lexington, 55
- Maryland:
  - Beltsville, 69
  - Upper Marlboro, 72
- Montana:
  - Huntley, 83
- New Mexico:
  - State College, 88

Tobacco, Medicinal, and Special Crops—Con.
- North Carolina:
  - Oxford, 92
  - Raleigh, 93
  - Rocky Mount, 94
  - Transou, 94
  - Waynesville, 95
- Oregon:
  - Corvallis, 103
- Pennsylvania:
  - Lancaster, 106
- South Carolina:
  - Florence, 110
- Tennessee:
  - Greeneville, 112
- Texas:
  - College Station, 116
- Virginia:
  - Blacksburg, 120
- Wisconsin:
  - Madison, 124

INDEX OF PERSONNEL

Aamodt, O. S., 12, 63
Abbott, E. V., 58
Ableiter, J. K., 68
Adair, C. R., 25
Adams, J. C., 85
Adams, J. E., 116
Aicher, L. C., 53
Akeley, R. V., 60
Alban, A. O., 59
Alderman, W. H., 75
Alexander, L. T., 68
Allanson, H. E., 7
Allard, H. F., 129
Allington, W. B., 49
Allison, C. C., 98
Allison, J. L., 63
Anderson, K. L., 55
Anderson, W. S., 78
Andrews, O. L., 21
Andrus, C. F., 108
Arceneaux, George, 58
Armstrong, G. M., 109
Ashby, Wallace, 11
Atkins, I. M., 117
Atwood, S. S., 90
Ausemus, E. R., 74
Ayers, T. T., 56

Bacon, C. W., 69
Bailey, R. S., 110
Bailey, W. K., 44
Baird, W. P., 97
Baker, A. L., 58
Baldridge, J. D., 81
Ballard, W. S., 28
Ballard, W. W., 43
Bamberg, R. H., 82
Barker, H. D., 62
Barmore, M. A., 122
Barnes, B. F., 116
Barnes, C. P., 69
Barre, H. W., 10
Bartlett, K. A., 107
Batjer, L. P., 123
Beachell, H. M., 114
Beattie, J. H., 65
Bechtel, A. W., 107, 130, 133
Bedwell, J. L., 106
Beery, L. A., Jr., 130, 131, 132
Belcher, B. A., 38
Bell, M. A., 82
Bennett, C. A., 80
Bennett, H. W., 78
Bergman, H. F., 73
Berkley, E. E., 62
Bever, W. M., 48
Binkley, A. M., 34
Bird, J. J., 112
Bisset, D. A., 44
Blake, S. F., 67
Blank, L. M., 115
Bledsoe, R. P., 43
Blood, H. L., 119
Bockstahler, H. W., 75
Bonner, James, 29
Boswell, V. R., 65
Bowers, J. L., 78
Boyd, George R., 14
Bradford, F. C., 72
Brandes, E. W., 16, 19, 67
Brandon, J. F., 33

Bratley, C. O., 90
Breedlove, Stella, 7
Bretz, T. W., 81
Brierley, Philip, 66
Brown, D. E., 72
Brown, E. M., 80
Brown, O. A., 45, 91
Brown, Otto, 22
Bruns, V. F., 121
Brunson, A. M., 50
Buchholtz, K. P., 124
Bullock, J. F., 110
Burkhart, Leland, 24
Burnham, D. R., 88
Burton, G. W., 46
Byrom, M. H., 37

Caldwell, J. S., 65
Caldwell, R. M., 50
Campbell, W. A., 42
Cardon, P. V., 7
Carlson, J. W., 119
Carpenter, J. B., 133
Carr, J. M., 46
Carr, R. B., 79
Carsner, Eubanks, 31
Carson, I. W., 56
Carter, E. P., 43
Cartter, J. L., 49
Chilton, St. J. P., 56
Chitwood, B. G., 89
Clark, F. A., 40
Clark, F. E., 52
Clayton, E. E., 69
Cline, M. G., 90
Cochran, F. D., 93
Cochran, L. C., 30, 114
Cole, J. R., 41
Coles, E. H., 52
Colwell, W. E., 93, 94
Comstock, V. E., 122
Cook, J. M., 109
Coons, G. H., 69
Cooper, W. C., 118
Cordner, H. B., 100
Cotton, J. R., 56
Courtney, W. D., 123
Cowart, F. F., 44
Crane, H. L., 65
Crooks, D. M., 20
Culbertson, J. O., 75
Cullinan, F. P., 7
Cumings, G. A., 71
Currin, R. E., 94

Dana, B. F., 103, 104
Darrow, G. M., 64, 65
Davidson, L. G., 58
Davidson, R. W., 64
Davis, G. N., 28
Davis, L. L., 27
Davis, R. B., 120
Dean, J. G., Jr., 98
Dean, R. J., 133
Dearing, C. T., 95
Degman, E. S., 105
Demaree, J. B., 65
Deming, G. W., 35
Deonier, M. T., 76
Dick, J. B., 79
Dickson, J. G., 124
Dillman, A. C., 61
Dodge, J. Robert, 70, 71
Doolittle, S. P., 65
Doyle, C. B., 62
Drake, Mack, 110
Dunegan, J. C., 64
Dunlap, V. C., 131
Dunlavy, H. E., 100
Dykstra, T. P., 56, 112

Eaton, F. M., 115
Eckhardt, R. C., 78
Edgar, A. D., 34
Edmond, J. B., 44
Edmundson, W. C., 35
Elliott, F. C., 115

Ellithorp, R. W., 100
Emsweller, S. L., 66
Erhart, A. B., 53
Erickson, E. L., 111
Erlanson, C. O., 67
Erwin, A. T., 52
Evans, L. S., 22
Evans, M. W. 99
Ezell, B. D., 65

Feaster, C. V., 81
Fellows, Hurley, 54
Fergus, E. N., 55
Fischer, G. W., 122
Fisher, D. F., 66
Flor, H. H., 96
Fowler, Earl D., 69
Fowler, M. E., 64
Freeman, O. M., 36
Freeman, W. H., 45
French, G. W., 73
Friend, W. H., 118
Furr, J. R., 29

Gaines, J. G., 46
Garber, R. J., 107
Gardner, F. E., 22, 40
Gardner, M. E., 93
Garver, H. L., 34, 71
Gaskill, J. O., 74
George, E. J., 97
Gifford, P. F., 34
Gill, D. L., 22
Gill, L. S., 24, 87
Gist, M. N., 39
Gore, U. R., 43
Gossard, A. C., 77
Graham, J. A., 94
Grandfield, C. O., 54
Grau, F. V., 63
Gravatt, G. F., 63
Gray, J. P., 56
Gray, R. B., 12
Greenleaf, Walter, 21
Gross, A. E., 104

Haasis, F. A., 89
Haber, E. S., 52
Hansen, Daniel, 83
Hanson, C. H., 92
Hanson, E. W., 124
Hardenburg, E. V., 90
Hardison, J. R., 102
Hardy, M. B., 41
Harley, C. P., 64
Harmond, J. E., 103
Harper, W. G., 87
Harris, Lionel, 85
Harrison, C. M., 73
Harrison, G. J., 32
Hartley, Carl, 64
Hartwig, E. E., 93
Harvey, E. M., 30
Harvey, P. H., 92
Havis, Leon, 64
Hawkins, Arthur, 59
Hawthorn, L. R., 119
Hayward, H. E., 31
Hein, M. A., 63
Henderson, R. G., 120
Henderson, R. W., 103
Hendricks, J. W., 94
Henson, P. R., 79
Hepting, G. H., 91
Hesse, C. O., 28
Hessler, L. E., 55, 62
Heusinkveld, David, 49
Heyne, E. G., 54
Hienton, T. E., 11
Higgins, B. B., 44
Hildreth, A. C., 126
Hills, C. R., 126
Hirt, R. R., 91
Hite, J. E., 76
Hodgson, H. J., 46
Hodgson, J. M., 47
Hoerner, G. R., 103
Hogg, P. G., 79
Hollowell, E. A., 62
Holman, L. E., 49

Holton, C. S., 122
Hooton, D. R., 117
Hughes, M. B., 108
Hukill, W. V., 41, 51
Hunter, J. H., 41
Hurst, W. M., 71
Hutchins, Lee M., 13, 64

Imle, E. P., 128, 129
Irons, Frank, 98

Jacob, K. D., 68
Jamison, F. S., 40
Jenkins, J. G., 45
Jenkins, M. T., 61
Jenkins, W. H., 110
Jensen, N. F., 90
Jodon, N. E., 57
Johnson, B. L., 23
Johnson, E. W., 102
Johnson, H. A., 78
Johnson, H. W., 79
Johnson, James, 125
Johnston, C. O., 54
Joley, L. E., 27
Jones, F. R., 124
Jones, H. A., 65
Jones, J. W., 61
Jordan, H. V., 79
Joyner, J. F., 37
Junnila, W. A., 36

Keating, F. E., 114
Keller, Wesley, 119
Kelley, O. J., 119
Kellogg, Charles E., 18
Kelly, C. F., 28
Kenney, W. D., 45
Kephart, L. W., 61
Kernkamp, M. F., 75
Kerr, Thomas, 92
Kienholz, J. R., 104
Kime, P. H., 92
King, B. M., 81
Kramer, H. H., 50
Krantz, B. A., 93
Krantz, F. A., 75
Kuska, J. B., 52

Lagasse, F. S., 40
Lambert, J. W., 75
Langford, M. H., 133
Lantz, H. A., 51
Larson, C. A., 104
Larson, R. H., 124
Lauritzen, J. I., 58
Leach, E. W., 133
Leding, A. R., 88
Lee, W. D., 93
Lehman, S. G., 93
Leonard, O. A., 78
Levine, M. N., 74
Lightle, P. C., 24
Ligon, W. S., 55
Lill, J. G., 74
Lindgren, R. M., 59
Little, V. A., 116
Livermore, J. R., 90
Locke, L. F., 101, 102
Lombard, P. M., 60
Long, L. A., 132
Loomis, H. F., 38
Loomis, N. H., 76
Lott, W. L., 93
Lovvorn, R. L., 92
Lutz, J. M., 76
Lynn, H. D., 118
Lyons, E. S., 43

McBirney, S. W., 34, 73
McCall, M. A., 7
McCalmont, J. R., 70, 80
McClarren, J. K., 7
McCown, J. McD., 108
McFadden, E. S., 115
Machmer, J. H., 46

McKee, Roland, 63
McLean, D. M., 121
McLendon, C. A., 42
McMurtrey, J. E., Jr., 69
McNeal, F. H., 106
McVickar, M. H., 120
McWhorter, F. P., 103
Magness, J. R., 13
Mallery, T. D., 131
Manis, W. E., 128
Marsh, P. B., 62
Martin, J. H., 61
Mattson, Harold, 96
Matz, Julius, 33, 132
May, Curtis, 64
Meek, W. E., 79
Meenen, F. E., 53
Mercado, L. G., 131
Miller, J. C., 56, 57
Miller, M. C., 7
Miller, P. R., 66
Miller, P. W., 103
Mitchell, G. A., 105, 106
Molander, E. G., 70
Moomaw, Leroy, 96
Moon, J. W., 113
Moore, H. C., 73
Moore, W. D., 39
Morris, V. H., 99
Morrison, B. Y., 16, 36, 67
Morrow, E. B., 93, 95
Morse, W. J., 63
Moseman, A. H., 7
Moss, E. G., 92
Muckenhirn, R. J., 124
Murphy, A. M., 48
Murphy, H. C., 51
Musser, A. M., 109

Neal, D. C., 56
Nelson, A. L., 125
Nelson, E. G., 102
Nelson, L. V., 73
Newell, L. C., 84
Newhall, A. G., 90
Nielsen, E. L., 124
Noble, E. G., 24, 26
Nuckols, S. B., 86
Nygard, I. J., 75

Obenshain, S. S., 120
O'Donnal, J. Forres, 130
Olmstead, L. B., 55
Osborn, W. M., 100
Osenbrug, A. E., 111
Overpeck, J. C., 88
Oveson, M. M., 105
Owen, F. V., 120

Paden, W. R., 109
Painter, J. H., 42
Park, J. K., 109
Parker, F. W., 7, 17
Parrott, I. M., 101
Pate, W. W., 68
Pearson, R. W., 21
Peebles, R. H., 23
Pendleton, R. A., 103
Pentzer, W. T., 28
Perry, B. A., 118
Piemeisel, R. L., 48
Pollard, L. H., 119
Post, A. H., 82
Potter, G. F., 57, 77
Presley, J. T., 78
Price, Charles, 31
Probst, A. H., 50

Quinby, J. R., 115
Quisenberry, K. S., 9

Ramp, R. M., 58
Ramsey, G. B., 48
Randolph, L. F., 90

Reddick, Donald, 90
Reece, O. E., 75
Reed, I. F., 21, 45
Reeves, E. L., 123
Reitz, L. P., 84
Reynolds, E. B., 116
Rhoades, H. F., 84
Rich, A. E., 107
Richards, B. L., 119
Richards, C. A., 125
Richey, F. D., 113
Richmond, T. R., 115
Ritchey, G. E., 39
Roberts, R. C., 26
Robinson, B. B., 62
Rockey, J. W., 71
Rogler, G. A., 97
Rollins, Reed C., 32
Rosenfels, R. S., 34
Russell, G. A., 115, 116
Ryall, A. L., 118
Rygg, G. L., 30

Saboe, L. C., 98
Salmon, S. C., 61
Salter, Robert M., 7
Sartoris, G. B., 38, 77
Saunders, R. F., 117
Savage, D. A., 101
Sayre, Charles R., 79
Sayre, J. D., 99
Schaal, L. A., 34
Schlehuber, A. M., 100
Schoenleber, L. G., 71
Schoth, H. A., 102
Schricker, J. A., 75
Schuster, C. E., 103
Schultz, E. S., 60, 65
Seamans, A. E., 83
Seeley, C. I., 47
Sevy, H. P., 7
Shanklin, J. A., 92
Sharpe, R. H., 59
Shaw, Luther, 94, 95
Shellenberger, J. A., 54
Sherwood, S. F., 69
Shrader, W. D., 81
Sieglinger, J. B., 100, 101
Sievers, A. F., 70
Siggers, P. V., 77
Simons, J. W., 41
Simonson, R. W., 113
Simpson, D. M., 113
Singleton, H. P., 121 122
Skold, L. N., 113
Sloan, L. M., 52
Smith, A. L., 21
Smith, C. L., 114
Smith, Edwin, 123
Smith, G. D., 52
Smith, G. S., 96, 97
Smith, J. R., 25
Smith, O. F., 86
Smith, W. K., 124
Snyder, Elmer, 28
Sorensen, H. G., 127, 128, 129
Spaulding, Perley, 36
Sprague, G. F., 51
Stadelman, R. E., 132
Stadler, L. J., 80
Stahler, L. M., 75
Stanley, J. M., 45
Stanton, T. R., 61
Staten, H. W., 100
Steinbauer, C. E., 65
Steiner, G., 15, 67
Stephens, J. C., 115
Stephens, J. L., 45, 46
Stevens, Harland, 47
Stevenson, F. J., 65
Stevenson, J. A., 15, 66
Stitt, R. E., 82
Stoa, T. E., 96
Stokes, I. E., 77
Stoneberg, Hugo, 56

Stout, H. L., 53
Street, O. E., 106
Stringfield, G. H., 99
Sturlaugson, Victor, 96
Suneson, C. A., 28
Swanson, A. F., 53
Swingle, R. U., 98

Tatum, L. A., 54
Taylor, J. G., 50
Taylor, J. W., 61
Templin, E. H., 116
Tharp, W. H., Jr., 25
Thompson, H. J., 80
Thorne, Gerald, 120
Thorp, James, 85
Tiedjens, V. A., 121
Timmons, F. L., 53
Toole, E. H., 65
Torrie, J. H., 124
True, R. P., 40
Tuckey, C. M., 81
Tullis, E. C., 113
Turner, A. W., 7
Tysdal, H. M., 62

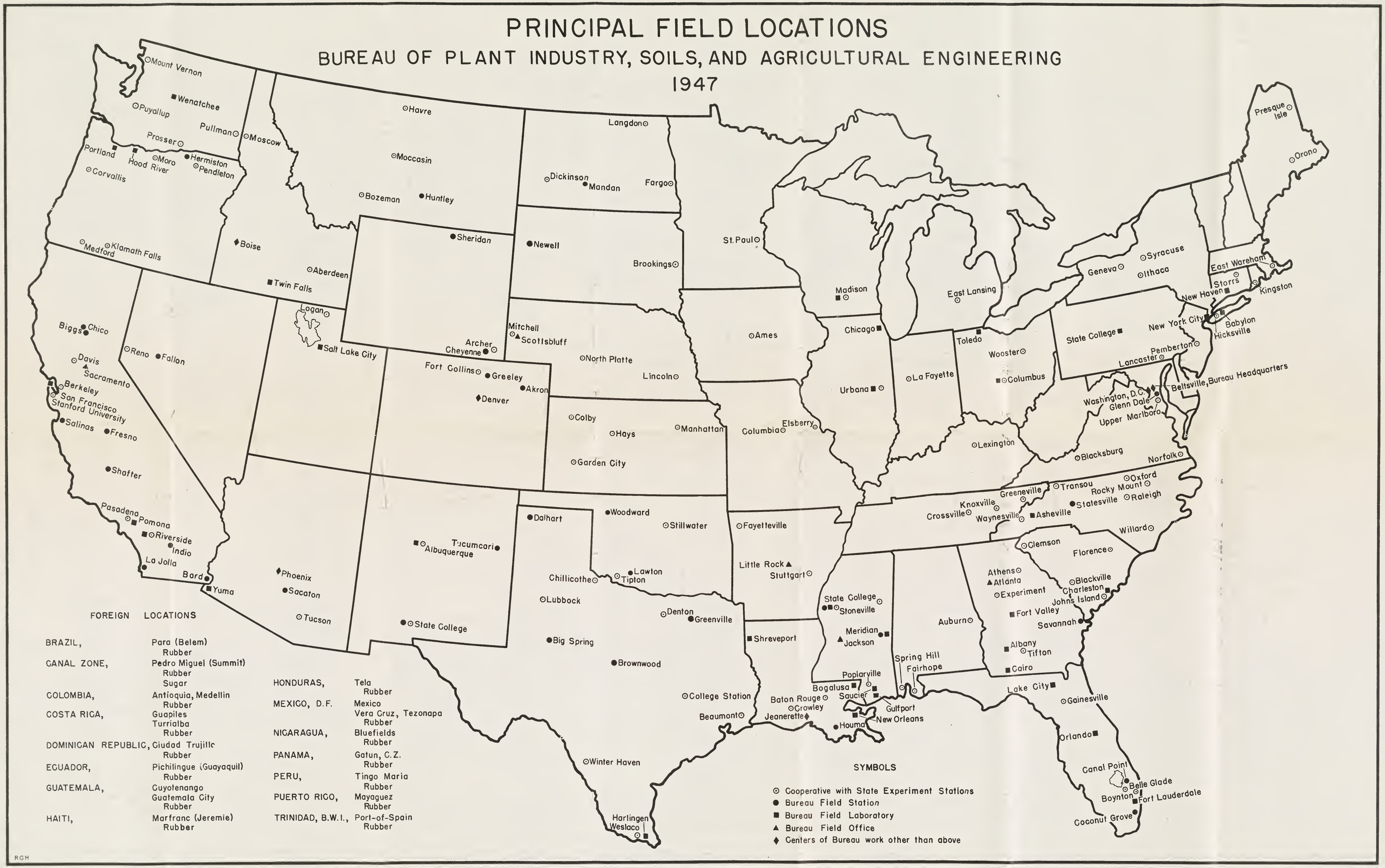
Valleau, W. D., 55
Vandiver, J. L., 112
Vaughan, E. K., 46
Verrall, A. F., 76
Vogel, O. A., 122

Wade, B. L., 108
Wagener, W. W., 32
Waldo, G. F., 103
Waller, T. M., 78
Walker, J. C., 124
Walker, Marion N., 31
Walker, R. K., 57
Ware, J. O., 62
Watts, V. M., 25
Weakly, H. E., 111
Webber, J. M., 30
Weber, C. R., 51
Webster, O. J., 84
Weimer, J. L., 43
Weinberger, J. H., 44
Welch, J. E., 109
Wellington, Richard, 89
Westbrook, E. C., 41
Wheeler, E. J., 73
Whitaker, T. W., 29
Whitehouse, W. E., 67
Whitlock, H. W., 69
Wiebe, G. A., 60
Wilcox, R. B., 87
Wilkins, H. L., 72
Willard, C. J., 97
Willhite, F. M., 86
Williams, C. F., 93, 95
Williams, R. M., 83
Wilsie, C. P., 51
Winston, J. R., 41
Wood, M. N., 31
Woodroof, Naomi C., 46
Woodward, Otis, 46
Woodward, R. W., 119

Yarnell, S. H., 108
Yates, H. F., 22
Young, P. A., 116

Zaumeyer, W. J., 35, 65
Zook, L. L., 85

○



PRINCIPAL FIELD LOCATIONS
BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING
1947

FOREIGN LOCATIONS

BRAZIL,	Para (Belem) Rubber
CANAL ZONE,	Pedro Miguel (Summit) Rubber Sugar
COLOMBIA,	Antioquia, Medellin Rubber
COSTA RICA,	Guapiles Turrialba Rubber
DOMINICAN REPUBLIC,	Ciudad Trujillo Rubber
ECUADOR,	Pichilingue (Guayaquil) Rubber
GUATEMALA,	Cuyotenango Guatemala City Rubber
HAITI,	Marfranc (Jeremie) Rubber
HONDURAS,	Tela Rubber
MEXICO, D.F.	Mexico Vera Cruz, Tezonapa Rubber
NICARAGUA,	Bluefields Rubber
PANAMA,	Gatun, C.Z. Rubber
PERU,	Tingo Maria Rubber
PUERTO RICO,	Mayaguez Rubber
TRINIDAD, B.W.I.,	Port-of-Spain Rubber

SYMBOLS

- ⊙ Cooperative with State Experiment Stations
- ● Bureau Field Station
- ■ Bureau Field Laboratory
- ▲ Bureau Field Office
- ♦ Centers of Bureau work other than above

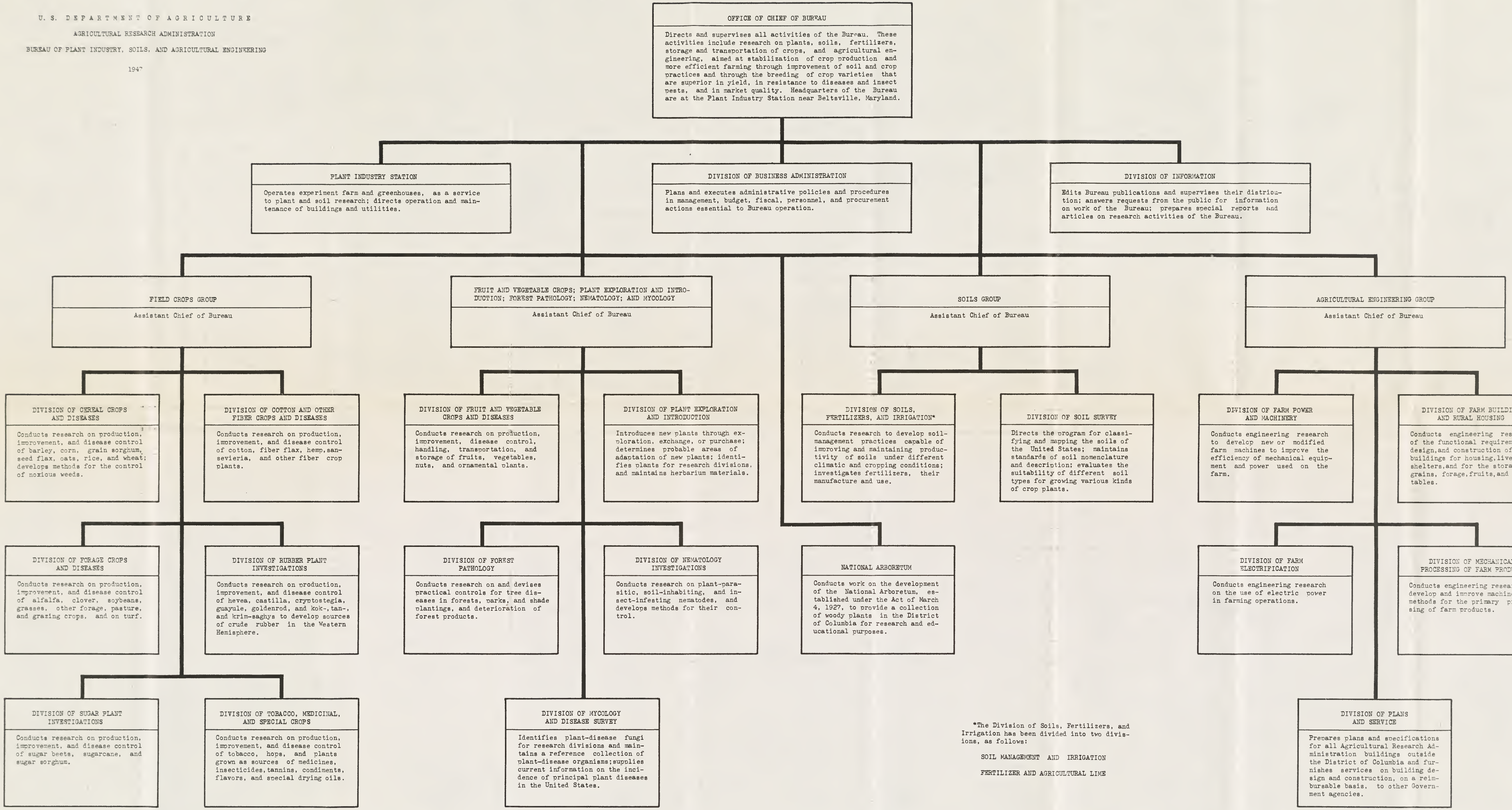
FIGURE 1.—Outline map of the United States, showing locations and character of the field activities of the Bureau of Plant Industry, Soils, and Agricultural Engineering.

U. S. DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH ADMINISTRATION

BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING

1947



OFFICE OF CHIEF OF BUREAU

Directs and supervises all activities of the Bureau. These activities include research on plants, soils, fertilizers, storage and transportation of crops, and agricultural engineering, aimed at stabilization of crop production and more efficient farming through improvement of soil and crop practices and through the breeding of crop varieties that are superior in yield, in resistance to diseases and insect pests, and in market quality. Headquarters of the Bureau are at the Plant Industry Station near Beltsville, Maryland.

PLANT INDUSTRY STATION

Operates experiment farm and greenhouses, as a service to plant and soil research; directs operation and maintenance of buildings and utilities.

DIVISION OF BUSINESS ADMINISTRATION

Plans and executes administrative policies and procedures in management, budget, fiscal, personnel, and procurement actions essential to Bureau operation.

DIVISION OF INFORMATION

Edits Bureau publications and supervises their distribution; answers requests from the public for information on work of the Bureau; prepares special reports and articles on research activities of the Bureau.

FIELD CROPS GROUP

Assistant Chief of Bureau

DIVISION OF CEREAL CROPS AND DISEASES

Conducts research on production, improvement, and disease control of barley, corn, grain sorghum, seed flax, oats, rice, and wheat; develops methods for the control of noxious weeds.

DIVISION OF COTTON AND OTHER FIBER CROPS AND DISEASES

Conducts research on production, improvement, and disease control of cotton, fiber flax, hemp, sansevieria, and other fiber crop plants.

DIVISION OF FORAGE CROPS AND DISEASES

Conducts research on production, improvement, and disease control of alfalfa, clover, soybeans, grasses, other forage, pasture, and grazing crops, and on turf.

DIVISION OF RUBBER PLANT INVESTIGATIONS

Conducts research on production, improvement, and disease control of hevea, castilla, cryptostegia, guayule, goldenrod, and kok-, tan-, and krim-saghys to develop sources of crude rubber in the Western Hemisphere.

DIVISION OF SUGAR PLANT INVESTIGATIONS

Conducts research on production, improvement, and disease control of sugar beets, sugarcane, and sugar sorghum.

DIVISION OF TOBACCO, MEDICINAL, AND SPECIAL CROPS

Conducts research on production, improvement, and disease control of tobacco, hops, and plants grown as sources of medicines, insecticides, tannins, condiments, flavors, and special drying oils.

FRUIT AND VEGETABLE CROPS; PLANT EXPLORATION AND INTRODUCTION; FOREST PATHOLOGY; NEMATOLOGY; AND MYCOLOGY

Assistant Chief of Bureau

DIVISION OF FRUIT AND VEGETABLE CROPS AND DISEASES

Conducts research on production, improvement, disease control, handling, transportation, and storage of fruits, vegetables, nuts, and ornamental plants.

DIVISION OF PLANT EXPLORATION AND INTRODUCTION

Introduces new plants through exploration, exchange, or purchase; determines probable areas of adaptation of new plants; identifies plants for research divisions, and maintains herbarium materials.

DIVISION OF FOREST PATHOLOGY

Conducts research on and devises practical controls for tree diseases in forests, parks, and shade plantings, and deterioration of forest products.

DIVISION OF NEMATOLOGY INVESTIGATIONS

Conducts research on plant-parasitic, soil-inhabiting, and insect-infesting nematodes, and develops methods for their control.

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Identifies plant-disease fungi for research divisions and maintains a reference collection of plant-disease organisms; supplies current information on the incidence of principal plant diseases in the United States.

NATIONAL ARBORETUM

Conducts work on the development of the National Arboretum, established under the Act of March 4, 1927, to provide a collection of woody plants in the District of Columbia for research and educational purposes.

SOILS GROUP

Assistant Chief of Bureau

DIVISION OF SOILS, FERTILIZERS, AND IRRIGATION*

Conducts research to develop soil-management practices capable of improving and maintaining productivity of soils under different climatic and cropping conditions; investigates fertilizers, their manufacture and use.

DIVISION OF SOIL SURVEY

Directs the program for classifying and mapping the soils of the United States; maintains standards of soil nomenclature and description; evaluates the suitability of different soil types for growing various kinds of crop plants.

AGRICULTURAL ENGINEERING GROUP

Assistant Chief of Bureau

DIVISION OF FARM POWER AND MACHINERY

Conducts engineering research to develop new or modified farm machines to improve the efficiency of mechanical equipment and power used on the farm.

DIVISION OF FARM BUILDINGS AND RURAL HOUSING

Conducts engineering research of the functional requirements, design, and construction of farm buildings for housing, livestock shelters, and for the storage of grains, forage, fruits, and vegetables.

DIVISION OF FARM ELECTRIFICATION

Conducts engineering research on the use of electric power in farming operations.

DIVISION OF MECHANICAL PROCESSING OF FARM PRODUCTS

Conducts engineering research to develop and improve machines and methods for the primary processing of farm products.

DIVISION OF PLANS AND SERVICE

Prepares plans and specifications for all Agricultural Research Administration buildings outside the District of Columbia and furnishes services on building design and construction, on a reimbursable basis, to other Government agencies.

*The Division of Soils, Fertilizers, and Irrigation has been divided into two divisions, as follows:

SOIL MANAGEMENT AND IRRIGATION

FERTILIZER AND AGRICULTURAL LIME

Figure 2.—Chart, showing organization of the Bureau of Plant Industry, Soils, and Agricultural Engineering.

776055 O - 48 (Face p. 158) No. 2

LIBRARY
CURRENT SERIAL RECORD
AUG 2 1948
U. S. DEPARTMENT OF AGRICULTURE